December 1997

BOARDWATCH MAGAZINE

Guide to Internet Access and the World Wide Web

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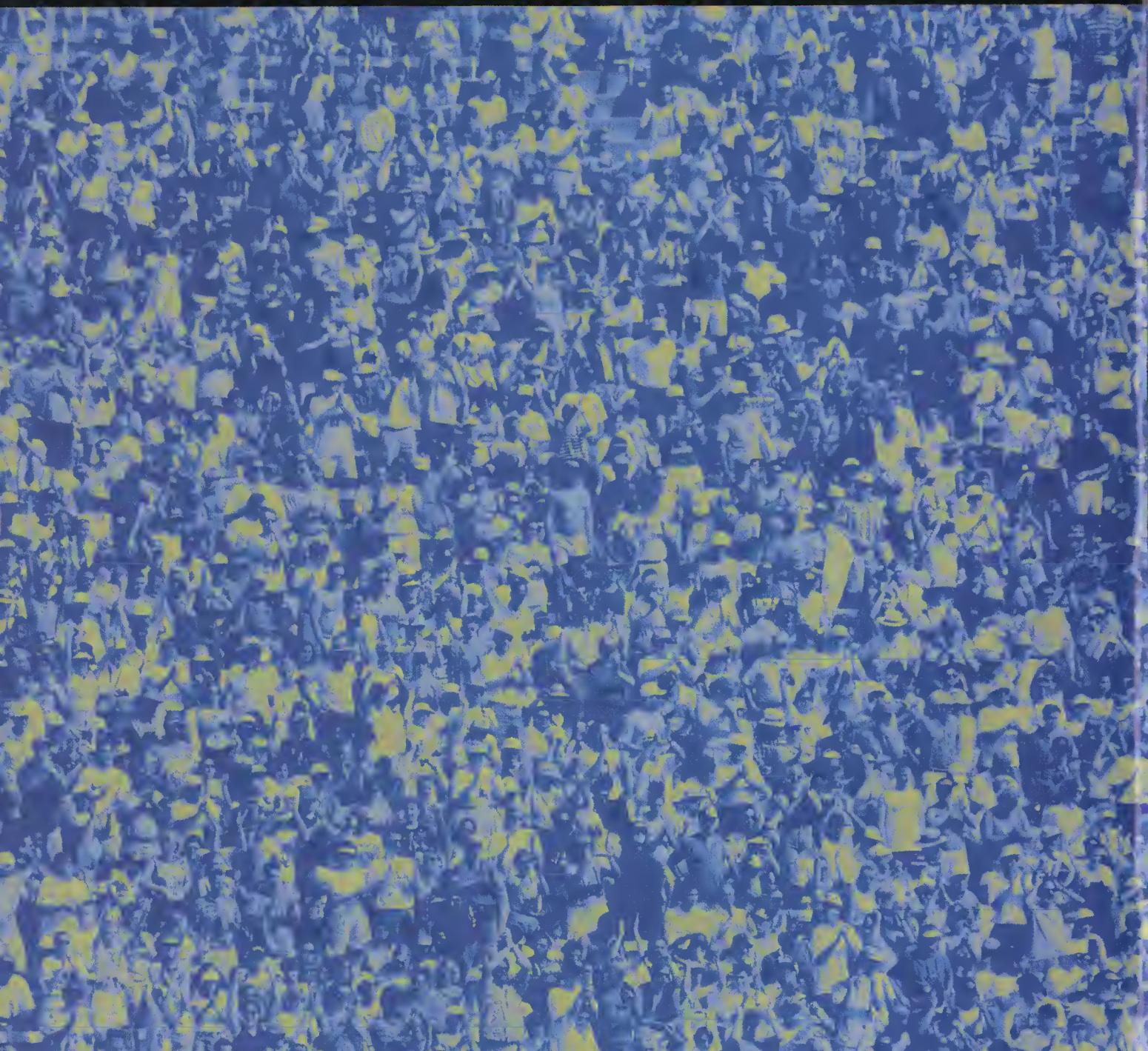

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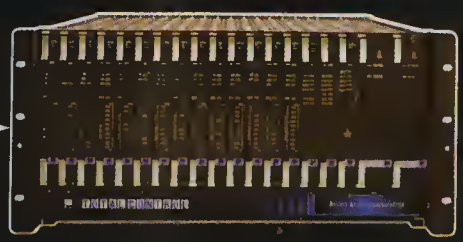

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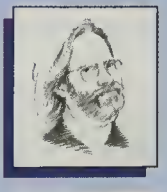

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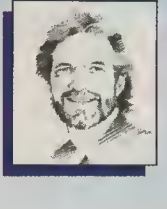

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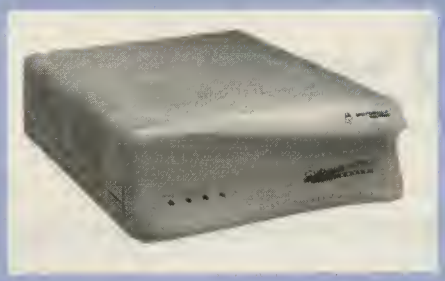

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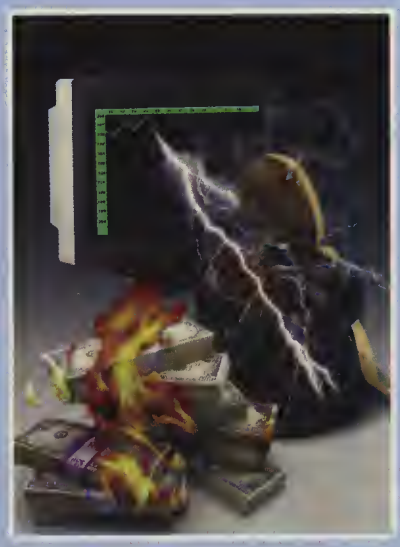

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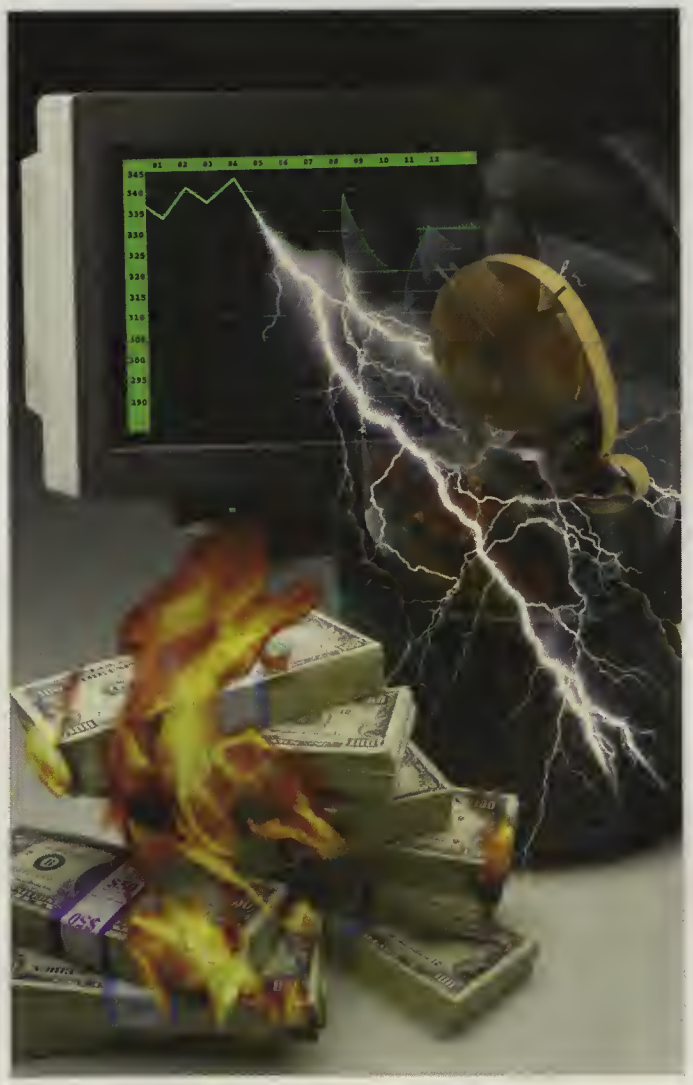
EDITOR'S NOTES by Jack Rickard

NETWRECKED ON WALL STREET

While the bulls and the bears vied on Wall Street during the final week in October, I was in awe of the fact that a stock market crash in Hong Kong could screw up the computer on my desk in real time. But it can. It did. And I'm mad about it.

So are several tens of thousands of Internaut investors who bought into the promotional drek espoused by the Egroup's E*Trade, Charles Schwab, PC Quote, and dozens of other online web trading services. The lesson learned is that these "enter your own trade" services work just fine, unless anything is actually going on in the market, at which time you have no access to do anything.



I started looking at online trading as part of a story on online investing a year ago. Initially, the only activity my inquiries brought was a daily onslaught of boiler room phone salesmen who had an almost admirable array of ways to get through our office staff to get a word with me on the phone. They are all my personal friends, calling for my mother who has been in an accident, etc., etc. These guys are good.

But I did open an account on E*Trade just for giggles. The service is alluring with real-time stock quotes, and they make it very easy to buy or sell stocks or options. You just click on some stuff, enter a code, and presto, sometime later that day you get part of what you ordered at a different price from what you thought. Customer service is a scream. Mindless boilerplate form e-mail taken to an art form.

Options were my downfall, of course. It is like Las Vegas but for real money and a much more intricate game than anything devised by the simple minds from trailer parks who dreamed up poker and black jack and craps. It has an endless series of variables from the time value of the option, the premium or discount for volatility, a sliding value based on where the underlying stock is against its own historical values, the marketability/desirability of that particular offset, the volatility of the market as a whole, the relationship to "triple witching days," and a whole series of other more subtle variables that make this the ultimate game of chance. Three in-and-out trades at the options table and slot machines will forever after hold all the allure of a candy bar machine in a Laundromat.

But in October, with daily trading volumes zooming past a billion shares a day, the technology failed rather totally. E*Trade President Christos Cotsakos blithely told the media that despite a doubling in volume, E*Trade ticked right along. He forgot he was in an online world and several thousand irate customers promptly crawled up his skirt via e-mail and newsgroups to remind him that the E*Trade service was essentially non-operational still a week after the event, and they had missed out on the action entirely. It is now the Tuesday AFTER the Tuesday, and I still can't get logged onto the service reliably. The service crashed and

burned horribly, leaving thousands of investors totally stranded.

This points up a wider problem that I think is going to grow in several different directions in 1998. The Internet has been great fun and very good at allowing us to send each other abusive, annoying, and insulting messages in the night. And for a certain segment, it has made it much easier to locate low resolution photographs of exceedingly plain looking women unadorned by the valiant efforts of the garment workers of America. But what if someone actually wanted to employ this network to do something useful?

The answer would appear to be that as long as it was a very few people, and what they were trying to do was likewise non-critical, and they didn't need to do it every time, it might work for awhile.

We are back to the basic "rushing to the rail" problem the network has had from the beginning. How do you design a web site that might get 50 visitors per week, or it might get a million a day? And if you did design it for a million per day, how would you know it would work until they actually showed up? And if you designed it to handle a million a day, and they did show up, and it broke, what do you do then?

The good news is that the World Wide Web has found success. Commercial web sites selling an amazing variety of things are actually working. In fact, most companies are using these web sites so poorly, it is hard to tell. It can be difficult to actually buy something online, and the online cognoscenti have overcome their reluctance to make purchases online. Yet thousands of web sites vaguely describe products, and you simply cannot buy from them via the Web. I tried to buy a canoe the other day over the Web. What? I need a canoe. I ought to be able to enter a credit card, and have it show up in the driveway sometime later. It isn't happening. Plenty of canoes. You can't buy one.

But through all of this, a subset of web sites are emerging as supersites that actually do tremendous traffic. In some cases it is content — *The Wall Street Journal*. In some cases it is cross-pollination with other media — CNN and *Martha Stewart Living*. In some cases it is product — Netscape and Microsoft. And in some cases it is online commerce — Amazon.com. But there is a large and increasing number of these megawebsites, and their design, deployment, and operation go considerably beyond the NT PC in the corner paradigm.

Hardware companies see this as a dream come true — the return of the mainframe market. IBM, Hewlett Packard, Silicon Graphics, Sun Microsystems, Digital Equipment Company, and Compaq Computing are all working furiously at rolling out superservers that look, act, and most of all are priced much like mainframe computers of yesteryear — or perhaps more accurately the minicomputer market of yesteryear anyway. In any event, big iron that can handle lots of hits — in theory.

The problem is nobody knows if they work. There are no test benchmarks to simulate a million visits per day with a gauge to see if the machine did it. And considering the investment of as much as a million dollars or more per web site, nobody wants to guess if it will work or not.

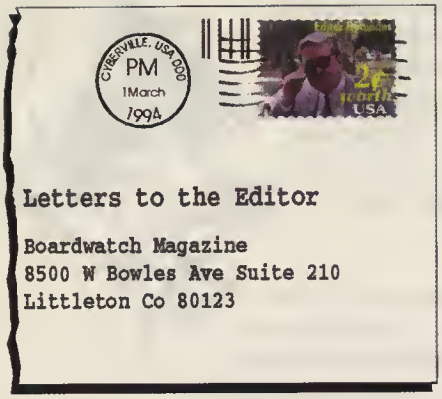
The Wall Street debacle didn't swamp the network. It worked just fine. But a few of the key servers blew one massive cloud of smoke and died. As a result, thousands of investors were thrown into the street with no way to execute their trades or partake in the game. Online trading companies responded with boilerplate form e-mail messages noting that it was Wall Street's fault and things weren't really as bad as they seemed. E*Trade even vainly tried to blame it on the end-users' ISPs. It was an infant industry's first baby fart, and it was a loud, smelly one.

There is a cultural disparity between telephone company mentality and Internet mentality. One of the major differences is that telcos are sensitive to reliability issues. The Internet hasn't been. If it worked, it was a bonus, and it was kind of interesting anyway when it was broken. As the network threatens to take on real-world missions, such as voice telephone, e-commerce, and financial trades, that isn't good enough.

I would predict that during 1998, reliability is going to become a huge issue. I would go further that the design and deployment of superservers is going to be a huge market, and proofing these superservers is going to be a huge problem.

E*Trade and the online stock services are not ready for prime time. Meanwhile, I'm looking for a Laundromat, a candy bar machine, and a canoe.

Jack Rickard
Editor Rotundus



Letters to the Editor

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LETTERS TO THE EDITOR

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ISP DEFECTION FROM TELCOS

Hi Jack,

First, I was glad to discover that I can still find an US Internet magazine providing relevant and insightful information which are not drown into zillions of ad. pages. I hope that your "baby" will become the first true global magazine reflecting the worldwide impact of the Internet. I will make sure to add my personal contribution to your recognition overseas when I am back in Europe. As you are probably aware, the European local loop market will be deregulated by 1998(similar deregulation to the US Telecom Act 1996). European ISPs will be more than happy to say goodbye to the good old "PTT" boys and jump into the so called new licensee operators, or the European CLECs. I would be very interested to measure the future impact of this deregulation by analyzing possible defection patterns. Has such defection analysis been conducted for the US market? I am guessing that already a lot of US regional ISPs must have switched their local dial-up access from telcos to CLECs such as MFS by taking advantage of a better price/customer support. Do you have any annual or monthly defection rate number by telcos regions to share or other information that can help to derive such numbers?

Again, thank you and your team for your continuous effort to keep this high quality consistency in your articles.

Looking forward to hearing from you

Stephan Bendayan (Paris, France but temporarily in Chapel Hill, NC)
stephan.bendayan@nt.com

Stephan:

It's an interesting area and one that we are probably remiss in not following more closely already. We have seen a couple of tentative steps with competitive local access carriers, but not always to good effect at this point.

I would personally love to see my baby become the first "truly global" magazine, but frankly I wouldn't mind it drowning in ad pages as well.

Jack Rickard

◆◆◆

MORE ON ISPs BECOMING CLECs

Dear Jack:

In your reply to my e-mail last month, you said, "I think we will see more ISPs basically gravitating toward becoming CLECs in the future." In general I would advise ISPs to affiliate with, or even own, CLECs (or get bought by them) as opposed to literally *becoming* CLECs.

There are basically three reasons: (1) However lightly they may be regulated, CLECs are subject to various regulatory requirements, primarily by states, that do not apply to ISPs. Who needs the hassle? (2) Internet telephony notwithstanding, for the foreseeable future the bulk of what ISPs do for their customers is distinguishable from what telcos do for their customers, and regulators are not really very familiar with the former. (3) If the ISP itself is a "carrier" and not an "end user," this plays into the hands of the ILECs who will claim that calls to the ISP do not "terminate" with the ISP, and we're back to the races on the question of CLECs getting compensated for calls ILEC end users make to ISPs.

Also, although I have only scanned the Fable of Contents for this month, I missed the answer to a critical question: Who won the Hummer?

Regards,

Chris Savage
csavage@crblaw.com

Chris:

There will be a lot of co-mingling of body fluids between ISPs and CLECs by partnership, by acquisition, and by ISPs becoming CLECs. I was delighted to learn that Harry Newton's son (Harry Newton of Computer Telephony Magazine, Teleconnect, and the Telecom Dictionary) has not only opened shop as an ISP at the age of 15, but has actually gone through the process to become a CLEC in the state of New York. Now if a 15-year-old kid can do it, it can be done.

Basically what you are describing is that as Internet access subsumes more of the role of communications provider, life is going to become more complicated for Internet service providers.

Yes.

Jack Rickard

METRICS FOR NETWORKS

Great issue once again guys.

However, checking performance of ISPs is not the rocket science you make it out to be. You miss one key approach. Instead of testing Internet performance, test *intranet* performance.

If performance is key to your business as it is to ours, do what we do. Buy a dial up account to the majors, find some sites on their backbone, and while dialed into their networks, test access to a mix of those sites.

No external influences, pure 100% network test. If a network can't offer speed in their own network, its a given that peering points definitely won't speed them up.

Mark
mcuban@audionet.com

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True enough Mark. But it can slow them down. And there is a basic paradox going on here. Most national backbone operators want to SELL access to THEIR network. Most of the buyers want to BUY access to the INTERNET. They are not one and the same and the degree to which they differ describes the connectivity, or lack thereof, between that network and the rest of the Internet. This comprises the very heart of the transaction of purchasing a connection to the Internet.

So we think it is important. But your mileage may indeed vary. Depending on what you want to use a connection for, various aspects can become more or less important. Our measurements are of necessity summary, and I strongly encourage all potential buyers to perform their own measurements at the times, places, and purposes that map their intended use of the network.

The bottom line either way is that you are not helpless in the sea of snake oil.

Jack Rickard

◆◆◆

WE NEED BANDWIDTH. NO, WE NEED A BACKBONE!

Dear Jack:

My mind is a flurry of ideas! I'm sure they are not so original, but I haven't seen them written any where before. I am in a position of having to purchase more bandwidth so your July 1997 "Best of the Internet" issue was perfect. I have spent the better part of the week researching the new smaller backbone providers. What a disappointment.

I called a handful of them that either had a local presence in Minnesota or had a reasonable "Jack rating" to cost ratio. Not one of them has produced a suitable solution for us here at GoldenGate. The reasons range from too costly, to false advertisement, to just plain incompetent.

So I hit the library and pull out the June 1997 issue of Boardwatch and read the article on UUNET "The Big, the Confused, and the Nasty." In that article, the statistics were quoted for how many connections are being provided by each company. I would like to assume that it closely correlates with the amount of traffic each company is carrying. Doing that it becomes plain to see that internet MCI, Sprint IP Services, UUNET, AGIS, and BBN dominate. No one else is even a real player.

Now let's assume that even if you buy a connection from one of these small kids the majority of your traffic to and from your site is bound to hit either internetMCI or Sprint thus giving your users that good old Internet lag. I'm not forgetting the obvious that we are buying bandwidth for ourselves, but I would like to propose a solution to a) Get the faster/biggest bandwidth for the buck, b) Get the Internet as a whole cooking again.

I have a hard time believing that the current small players are going to do this for us. First of all, they just don't have the market share or pull. Secondly, the majority of them don't seem (through my experience only) to have the sales and the technical skills to handle the need. But I know a group that does.

What about all of us? According to my ISPCON solicitation there are 4,009 of us in the U.S. and Canada. Subtract out the 29 current backbones, although they would be welcome to join if they cared, and there still are 3980 of us. Why not have a backbone by the people and for the people?

They are doing something similar in Colorado on a small scale where a coop of ISP's are buying bulk bandwidth. Members provide their own expertise in hooking themselves up. Whatever they use they pay for. We are starting to do something similar here in the Twin Cites. There is a group of us that have PVC's to a central site where we exchange data, much like a mini NAP.

Let's say that 500 middle size ISPs are up for giving it a try. We build ourselves a backbone of PVCs to all the NAPs and also any other major metropolitan area, like here in the neglected Twin Cites. If the big boys get all stinky about it, we buy bandwidth from them like SAVVIS does, until our market share forces them into "peerhood".

Members would pay all costs of the backbone based on the cost of their local loop charge to the coop and the percentage of data sent over the backbone. There would have to be a sliding scale so someone sending 10 times as much data isn't paying 10 times as much.

We have the skills to set it up. We have the market share. I'm not sure how much, but as a collective group it grows every day. We have the money. We have the attitude. The Internet subculture is ripe for a grassroots movement.

That's it. What do you think? Where are the flaws? Maybe it is a pipe dream, but isn't that what this thing we call the Internet is?

Thanks.

Mury Johnson
GoldenGate Internet Services
mury@goldengate.net

Mury:

We have two sayings here at ***Boardwatch****. First, if you laid all the ISPs end to end, it might be the first time any of them have been laid in a year, but they still wouldn't reach a conclusion. Second, organizing ISPs is like herding cats.*

If you like the way SAVVIS did it, and I do, go get a connection to SAVVIS. We advocated a non-backbone network of much higher granularity between smaller ISPs nearly two years ago. There have been some local NAP initiatives since then, but nothing of national scale. And with regards to peering, we are seeing some of these smaller backbones grousing about getting peering with UUNET, MCI, and Sprint, but who for some reason don't seem to peer with each other. This is tacit acknowledgment of a very real peering hierarchy that tends to validate UUNET and Sprint's position.

In actual practice, the June article is obsolete. UUNET has backpedaled rather furiously from the end of peering position as soon as it became public. What remains is a higher gate for peering agreements. This is actually not so alarming. From the beginning there has been a kind of escalating peering inflation where each year, the bar gets set a bit higher for peering relationships. This is not in and of itself bad. What we were advocating was a clear and published peering requirements document and policy. The self-serving position of UUNET is still somewhat ugly to watch, but in practice is a little more rational than the clumsy public posturing of John Sidgmore.

The bottom line is that you are quite correct. All the elements are there to create a national backbone of nothing but ISPs. But pulling them all together is non-triv-

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ial. And even existing backbones such as PSI and AGIS who have targeted ISPs as a specific market are having a tough go of getting a quantity of them onboard.

Jack Rickard

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WIRELESS MODEM FOR HIGH BANDWIDTH NETWORKING

Dear Mr. Rickard

I recently started reading your magazine on the Web and found it to be very informative. This is one of the excerpts from your editorials:

"This week, the FCC approved the Unlicensed National Information Infrastructure (U-NII) band. This is actually comprised of three 100 MHz bands in the 5 GHz area specifically for 20 Mbps wireless data networking. One band is 200 mw for LAN's within a building. One band is limited to 1 watt for campus like networks. And the last band has a 4 watt ceiling ostensibly allowing a 6 mile radius network. The equipment is not expected to be terribly expensive. But if it becomes available, and a handful of small ISPs start mounting just five or six of these transmitters on light poles around town, they'll be offering customers 20 Mbps connections that don't even require a telephone line."

You did not mention any company who will be providing equipment for this type of networking. However, I stumbled upon a company who claims to provide modem for this type of connectivity. (`www.inficom.com`) I tried to find more information about it more than they have on their web page. It seems that there is not much discussion about their equipment. Would you please help me by writing to me about your opinion in relation to their claims of providing high speed wireless networking. My interest is in distributed learning systems and this type of data networking will be a big help. Thanks in advance.

Javed Alam, Ph.D.
Professor Civil and Environmental Engg.
Youngstown State University
`jalam@cc.ysu.edu`

Javed:

The UNII band was approved in January 1997 and I'm seeing not much with regards to equipment. Wireless hardware has proven a treacherous business in the past with a number of vendors such as IBM getting in and getting right back out again. I would look for some small, entrepreneurial companies such as Inficom to pioneer and Lucent and Motorola to then validate with significant products. But I'm guessing it will be toward the end of 1998 before you see substantive offerings.

Jack Rickard

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BRAVO ON THE ANALYSIS

Hi, Jack,

Wow! What an incredible job you and your magazine did regarding the analysis of the T1 lines. You really pulled some pants down on this one. If you keep doing these kinds of comparisons, you'll distinguish ***Boardwatch*** as being the place to go for these kinds of questions, like PC World has a monthly line up of the top 10 value PC's and the top 10 high-end PC's. But in your case, the data is much harder to come by. Thanks for some amazing detective work!

Regards,
Dave Straley
`djs@sandyhook.com`

Thanks Dave. I thought we already had some years ago. But we do want to continue the work.

Jack Rickard

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HOW ABOUT A DICTIONARY?

Dear Jack:

I have been an avid subscriber and newsrack reader of ***Boardwatch*** for a few years. Your stack of issues and ISP directories finally fell over and spilled my wife's plant on my computer table — so I think this should validate my loyalty to your work.

Your ISP directories are a great source of information; here's an idea for another ***Boardwatch*** pub: a dictionary of internet / ISP / telecom terminology. (OK, I can see your eyes crossing and I know the ulcer just hick-upped.)

Maybe its old age or just plain intellect, but I have almost forgotten more than I ever knew of telecom acronyms and jargon. So when a novice asks "Just what is ADSL going to do for my busines?", I know an answer in some part is somewhere in my stack of Boardwatches. Which one, was it an editorial or a telebit?

What we need is a comprehensive guide to terminology including design concepts and diagramming of technology (your problem Jack, you are a great illustrator as well as poet) where able. Of course, you'd have to include the usual paragraph explaining what "URL" means.

Now if you don't have time for this exhaustive project in the next two years, could you possibly recommend a good guide or compendum for this purpose? Again, we don't need another "dummy" book, but something with deeper-than-simple explanations and illustrations where possible.

Just an idea for your "spare" time. Keep up the GREAT work!

Sincerely,

Charles Stidd
Malibu Systems
`cwstidd@aol.com`

Charles:

I don't really have any spare time. What I do have I like to spend on original work or something that I can do better than anyone else. Harry Newton is now in the 11th edition of his telecom dictionary and it not only diagrams almost every telecom word in the universe, but it's the first humorous dictionary I've ever read. Some of the definitions, always true, are just hysterical nonetheless. I bought a gross of them and sent one to each of our advertisers — despite the fact that Harryy's Computer Telephony and Teleconnect magazines are peripherally a competitor.

You can order a copy at
`http://www.teleconnect.com`

Jack Rickard

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K56 Flex

Dear Jack:

As a long time reader, and occasional subscriber, I've noted your comments

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An open route to the future.

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www.rss.rockwell.com/K56flex

IBM SONY TOSHIBA ASCEND CISCO SYSTEMS microcom Shiva

with interest and merely want to add that the K56Flex modem fiasco isn't a problem that will go away soon. I was sucked in —as "an early adopter" thinking that I'd realize major speed gains. First, the Bocaresearch 56e was dead on arrival. After about four weeks I got another one and found that my 159 clams had increased my connect, occasionally, to 28.8. I get 26.4 routinely out of it and my old Supra 28.8 PnP. To me, this is really a case of overblown advertisement: yes, my provider claims to support K56Flex, but so far it hasn't panned out for me. Keep up the good work. Phil.

Philip:

Well, in most cases it is better than you describe, but I would still hesitate to claim it is other than a fiasco. Most of the 56K PCM modem stuff comes in at about 44 Kbps, which is actually quite a bit faster and much more enjoyable. If you aren't doing any better than 28.8K, you have one of the early Rockwell chip modems, or your connecting to ports on your ISP that don't in fact support K56flex. A number of the ISPs are playing games with this availability.

I would urge you to pursue it up to a point. But the point is in the 42-46 Kbps range.

Jack Rickard

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BOARDWATCH NEWS SERVER ARTICLE

I'm glad to see you're back in ***Boardwatch***. I got worried when there was no Avi in it the last month or two. Your informative articles (and the advertisements) are the only reason I tolerate that magazine taking up space in my undersized PO box.

Oh, please... Don't you find even the ads of mild interest?

I have a question about your News Server article: You suggest that all the control.cancel articles be rm'd every 10 minutes to reduce the load during expiration. Is this suggestion just for leaf nodes? Is there a significant affect on the propagation of the cancel messages to downstream sites?

Scott Musser
LebaNet/SunLink

It's a suggestion for everyone! Otherwise you'll have 200,000 files in a Unix directory, and expire will take 24 hours out of each day to run :)

Really, really, necessary.

But that, plus intelligent disk load balancing, should make inn run acceptably for now.

Avi

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WORSE THAN SPAMMED!

Dear Jack

Thanks for putting out a quality magazine. I read in your recent letters to the editor section that you were getting 90 spams a day. Well, I ran into another interesting problem. I have my own domain name (`conet.com`) and all emails that are sent to that domain are dumped into a single pop mailbox. Well, some bozo with a ponzi/MLM scheme decided to spam a bunch of people from the e-mail address `wwatt@conet.com`. The result is that my mailbox is getting stuffed with a ton of messages saying "returned mail: user not found" and people are starting to complain at me to stop sending them this crap. The only contact information is a toll-free phone number: **1-888-805-0559**. In the past five minutes, I've received over a hundred of these messages and I have a sinking feeling that these spammers have sent email to millions of addresses and I'm going to be getting a serious bill from my ISP when I blow my 25MB space quota. I'm worried that my ISP might cancel my account.

What can I do? Is there any filtering software I can use to reject these emails without having to download them all? (I have another sinking feeling that I am going to have to write it.) What legal re- course is available for a person in my shoes?

Thanks,

- Derek

P.S. You can post this and your reply in the "letters to the editor" section if you feel that this would be of value to other readers.

Oh, and here is the email these people have been sending out:
Return-Path: `<wwatt@conet.com`

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From: wwatt@conet.com
Received: from ventures (pppb080.nstar.net [206.66.40.80]) by polaris.nstar.net (8.8.7/8.8.7) with SMTP id KAA22182; Thu, 16 Oct 1997 10:44:44 -0500 (CDT)
Date: Thu, 16 Oct 1997 10:44:44 -0500 (CDT)
Message-Id: <199710161544.KAA22182@polaris.nstar.net
To: oneandonly@aol.com
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Note: Please do not reply with an email...You will receive further information by calling the too-free number, 24 hours a day.

Derek:

Contact John Quarterman at Zilker Internet Park (mids.org). They just had a similar situation and filed a suit against the perpetrator. I would encourage you to call the toll free number, find out everything you can about this person, and then go get 'em through the court system.

Jack Rickard

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This notice appears as a matter of record only.
September 1997

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ANY HOPE/SUGGESTIONS ON DOMAIN NAME DISPUTE

Jack,

I've been an avid reader of Boardwatch magazine since about the time my other favorite magazine, Mirco Cornucopia, disintegrated back in 1991. The reason I am writing is to inquire about your experience with Internet domain name disputes and determine if the company I work for should fight for our 'global network' rights.

I work for Socrates Computer Systems, we have been in business since December 1989. We registered plato.com with the InterNIC back in October 1994. It was primarily used for UUCP e-mail on a limited basis. We moved the domain name from PSINet to a local ISP three months ago and Network Solutions sucessfully executed our domain name move request.

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We are using plato.com for our new 36,000 square foot facility which is connected to the Internet via frame T-1. Until two months ago, no one had inquired about plato.com. Since that time we have received two inquiries from other companies.

On Monday, while submitting a change request to Network Solutions for updating the IP addresses of our DNS servers, I learned that one of the companies who inquired about plato.com has filed a dispute with Network Solutions claiming that we are infringing upon their registered trademark PLATO. Network Solutions decliened our request and sent back the standard domain name dispute e-mail. Thankfully, they have not suspended use of `plato.com` so far.

One of my colleagues has researched an alternative domain name currently in use. He suggests that since the company using the alternative domain name is a small consulting company, our company should take legal action to obtain the alternative domain name for our use and surrender plato.com. I am utterly disgusted at the thought of strong-arming a smaller company for their domain name merely because another company is trying the same tactic on my company.

Corporate counsel for my company is recommeding that we surrender plato.com and choose another domain name, claiming that it is not worth the trouble and difficult to win this type of a case. I am reluctant to surrender `plato.com` and hope that you can provide some insight into this issue.

Regards,

Evan Wagner

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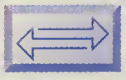

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Evan:

These are murky waters. We are seeing almost constant trademark disputes regarding domain names. The existing trademark law is actually quite complex, and oddly, just having a registered trademark is not total protection. Your use of plato.com may be valid, or may even predate the other parties trademark registration. The law is also riddled with exceptions. For example, if your legal name were PLATO, their trademark registration wouldn't matter much. The biggest problem is that it IS possible for two companies with different SIC codes to legally trademark the same name. But it ISN'T physically possible for them to both own the same domain name. You could have an automobile manufacturer named PLATO and a software company named PLATO and there really is no trademark infringement largely because it has been held that there is no possibility of customer confusion. But they can't both have `PLATO.COM` *as a domain name for obvious reasons.*

I'm told there have been 43 trademark disputes involving the courts, and all but three have been settled out of court. Those three are still pending. We don't have a single "ruling" that I can find on trademark issues as they apply to domain name assignments.

I myself would fight to keep it. It's a good domain name, and so far the only movement of domain names has been from larger companies simply cowing smaller companies. No judge has ever ordered the transfer of a domain name that I can find. But the process can consume resources, as all legal processes can.

Jack Rickard

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COMMENTS ON 'USENET NEWS SERVERS'

Avi

Hi Avi. Pretty good column, but slightly behind the times. While most sites still use INN for news reading, it is rapidly disappearing from the news transit scene. Diablo (which I wrote), NNTPRelay, and Cyclone is now being used on headend news transit boxes.

This shifting away from INN has also cleaned up the USENET backbone. The new news transit systems are capable of an order of magnitude greater article rates then INN and tend to not get behind even under adverse conditions.

This has resulted in two things. First: it is relatively easy to get a good newsfeed these days, and Second: if you use a news transit system on your main newsfeeds box and separate the readers into their own box(es), maintenance of the reader boxes drops drastically. Separating out the news transit side also allows you to easily play with your feeds. Due to the precommit caching that all three news transit systems use, It is no longer a major bandwidth waste to take lots of feeds. This means you can take 3, 5, 10, even 20 full feeds into your newsfeeds box. It only takes two or three to get full coverage.

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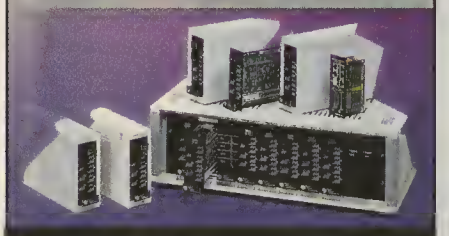

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Oh, BTW, I also wrote the shared-active patch :-). Nice mention! There is also actived (which someone else wrote) which is potentially even more memory efficient once all the bugs are worked out of it.

-Matt

Matt

Thanks for the feedback.

*Most of the **Boardwatch** readers, however, are unlikely to need separate feeding and reading servers, and none of Diablo, NNTPRelay, and Cyclone (and I'm familiar with both Diablo and Cyclone) support reading at this time, though I've written a non-INN based cyclic news server that does — and that stores overviews cyclically. Right now I'm working with Highwind to get their news reading stuff optimized..*

I'll be covering the specialized feeding servers in a few months, and then hopefully after that there will be some specialized reading servers out there as well.

Jack Rickard

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Hi Jack.

I think you missed the mark with the spamming issue. The issue is not one of free speech and never was. The issue is one of cost. We spend thousands of dollars every month fielding customer complaints and cleaning up after spammers who forge return addresses and load down our servers.

Are the spammers compensating us for this privilage? For that matter, are the spammers compensating us for the lost business and bad feeling we incur from our customer base? SPAM is an attack on our systems and customers plain and simple. It is NOT a free speech issue, and any ISP that does not take spammers in hand deserves whatever hell it gets. This does not mean the ISP is responsible for the spammer... the spammer is certainly responsible for himself, but once an ISP is notified of a spammer that ISP becomes responsible if it does not do something about the spammer. We ISPs are not in the business of bashing each other, we are in the business of being good neighbors.

AGIS is not being a good neighbor. They are singularly unresponsive to complaints and, frankly, are digging their own graves. The rumor is that it tooks threats of quitting from their own staff to force lawlor to finally take action against Cyber Promotions and other spammers. We aren't the ones bashing AGIS's network, it's our users and the users of every other legitimate ISP in the world that are bashing AGIS's network. I do not condone these actions, but I don't see as how the spammers and spam harborers can complain because, frankly, what the users are doing in anger is no different from what the spammers were doing in the first place. You cannot condemn one without condemning the other.

Matt

Matthew Dillon
Engineering, BEST Internet Communications, Inc.

Matthew:

I rather think it is you who are missing the point. In fact, I can't believe you even read the editorial in the November issue. I am not defending SPAM as a free speech issue, and haven't since the days when it was telemarketing calls on my telephone. I agree totally that it is an attack on your system, and mine, and the end users. You have every "right" to do whatever you can to defend it.

The problem is that in doing so, you are volunteering to be the default deputy sheriff of spam. And it is a role you don't ultimately want. Bashing Phil Lawlor and AGIS is juvenile, but worse, self destructive. Phil's position was that he was an ISP that sold access, and that those who buy it are responsible for their own actions. The ISP should NOT be held liable for the actions of their users.

The issue is, who should be held accountable for the actions of spammers, the spammer or the ISP. You are tacitly acknowledging that the responsibility should lie with the ISP? I take exception to that position, and disagree with it in the strongest possible terms. I certainly do not see it as a free speech issue.

You not only lay responsibility for spam on the door of the ISP, but insist that ISPs that don't see it your way deserve any hell they get? And specifically grief

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from other ISPs? Your claim is that it is users bashing AGIS. Bullhockey. End users don't even know what an AGIS is. It is ISPs such as yourself that have turned to feed on AGIS. And you may take great joy in the fact that you have in fact won. You have established that ISPs should be responsible not only for spam, but also any other odious activity involving electronic mail.

Now live with it Marshall Dillon. You're now in charge of spam in these here parts.

Regards;

Jack Rickard

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LAWLOR CRUCIFIED AND SIDGMORE'S PENNY PER PIXEL FANTASIES

Jack,

I read your editorial approximately 1/3rd of the through before I had to stop. I couldn't take it any more.

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You just don't get it. You have no idea what you're talking about. Your leap in fallacy from the issue of controlling spam, to content regulation vis-a-vis anti-semitism, Ku-Klux-Klan, et al, is absurd, idiotic, and totally without basis.

Repeat after me: "Spam is not a content issue". "Spam is not a content issue".

The reason responsible ISPs prohibit spamming is not because of content, but because spam is THEFT OF SERVICES. Most of us still pay per-minute charges to access the Internet, and by filling our mailboxes with unsolicited junk, spam costs us time and money. Content had nothing to do with this.

I really regret to inform you that the whole foundation upon which you built your lengthy dissertation is false. The reason that Lawlor caved in was not because others found his "content" objectionable, but because Lawlor aided and abetted a bunch of thiefs and crooks with stealing everyone's resources. For months and months on, Lawlor did nothing as his customers crashed and mailbombed the rest of the Internet. That's precisely why pressure was brought upon him, and he folded like a cheap camera. That would've happened no matter WHAT was spammed.

Sam:

Actually I do get it. You don't quite. Spam is of course a content issue. The only thing differentiating spam from other e-mail is its content. And in point of fact, no two ISPs can quite agree on what spam is.

The concept of spam as theft of service is interesting, but has no basis in law. We went through all of this years ago with telephone solicitation. It was held that advertisers DID have the right to use MY telephone service as THEIR advertising medium. I never did agree with this. But that was the law of the land.
The endless series of 7:00 PM sales calls has actually abated. This is due to the ubiquitous use of answering machines and voice mail that made the economics of direct telephone sales unattractive. But notice that we never did talk about telephone companies "harboring" telephone sales boiler rooms.

The problem is that it is YOU who don't get it Mr. Sam. Unfortunately, you will go out of business without leaving a dent, and the surviving ISPs may well be held responsible for every ill that can be expressed via e-mail forever after. A poor legacy, and a damned poor choice by a disappointing level of intellectual development.

You did a dumb thing. You did it in public. Now you have to live with it.

Jack Rickard

◆◆◆

LAWLOR CRUCIFIXION AND YOUR MEA CULPA

I was pointed to your article by an outraged howl on news.admin.net abuse.email.

No doubt you've probably already begun hearing from many in our group.

There seems to be a unspoken belief amongst us that speaking in a loud voice and using a bullying tone will remove from consideration any question of whether Internet legislation to combat spam might impinge upon personal freedom.

As you point out, spam is becoming an epidemic, and I am not sure what the solution is, so I have started hanging around this newsgroup. But I've fast come to understand that while many of the people in the group understand how to read headers, they know very little about mass communications law, the first amendment, and the history of telephony on which the Internet rides.

There's a lot of standpat fundamentalism in nanae (news.admin.net-abuse.email). These folks are largely systems administrators and very few of them seem to understand that legal decisions, particularly constitutional ones, are often balance-of-rights decisions. The denizens of nanae try to read court decisions the way Billy Sunday read the Bible, and it gets them in a lot of trouble.

A few weeks ago, another journalist (from Wired) wrote a similar piece, and one of the nanae-ers decided that her article, plus her response to his email, gave him license to send her several hundred copies of spam he's collected. Some of these folks collect spam the way little boys collect ugly insects. Its not particularly nice to have them, but its

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Often, the level of harassment that comes out of the group several thousandfold the level that went into it. Perhaps we've finally succeeded in disproving laws of thermodynamics.

I have no doubt you will get several blasts of ill wind because you've violated the groups' conventional wisdom.

While I am not sure I agree with your ultimate take on this, I do respect that it comes from a much broader understanding of the communication's infrastructure than even the more expert player in this field.

Many in nanae will try and dismiss your comments as clueless. I write this to assure you that there are some of us who understand what you are saying, and want to solve the spam problem by some cure that does not spawn its own loathsome disease.

Good luck, and I hope there are no limits on your inbox, or I'd predict you'll soon be bouncing mail.

Jerry Trowbridge

Jerry:

Thanks for the note. Undoubtedly I will get a bit of heat. That's actually pretty familiar ground for me and goes with the territory. As to the inevitable e-mail barrage, I was dealing with that on a daily basis long before these "clueful" net experts were online at all. That they've formed a little posse to bully anyone that doesn't agree with their take on the universe is in no way new or even particularly alarming. I started in the very early days of bulletin boards — a much rougher crew in my estimation than the current crop of equally limited minds with big voices..

That is really a side battle with a small crew of limited impact morons. The wider issue remains spam itself. It really has reached a level where e-mail is becoming difficult and awkward. You refer quite correctly to the corollary issue of telephone solicitation. This has gotten a lot better because there were some basic costs to making sales calls, and the universal adoption by end users of answering machines made the cost per sale rise to untenable levels. I actually don't have an answering machine, never did have one. And an unsolicited sales call is now a surprising and notable rarity.

The problem is that the cost to send thousands of e-mail messages is very nearly zero. You don't have to pay "e-mail marketers" to send the messages. You write one message, and have a computer spew them forth in huge quantities. So no matter how ineffective they become with end-user filters (the analog of the answering machine), the costs per sale can never rise to an unattractive level. This is a open feedback loop with no gain limits. And I am seriously concerned. I fear that Bob Metcalfe may be correct, and that we will live with spam for so long as we have free e-mail. But I would hope for another solution.

The only thing that suggests itself currently is legislation after the fashion of junk fax laws. The disincentive there is not that junk faxers are jailed, but rather that disgruntled recipients have a clear path to civil recourse and statutory damages quite beyond the inconvenience and paper costs. We are actually beginning to see some activity in this area, as noted in the November issue. In this, we find end users bringing suit against the spam originators. Currently, the outcome is muddy. Perhaps with legislation, this can be clarified.

But meanwhile, this little band of intellectual giants would seek to cloud the issue by a vigilante technique of beating up on ISPs for the sins of the spammers. The direct analog is holding the telephone company responsible for "harboring" telephone solicitors and junk faxers. It was a ridiculous notion then. It is a dangerous notion now in the context of spam. It is dangerous because if these supposed veteran net mavens can't walk the walk intellectually through this minefield, it offers little hope that legislators can do a better job of it. We could actually make access providers responsible for content rather then the perpetrators. I see this as a poor outcome.

In any event, the current mode is for the thoughtful and concerned to remain quiet to avoid the little bullying vigilante messes caused by this self appointed committee of morons. This is a poor situation. Anyone who might come up with an effective solution won't, while those with a demonstrated non-solution prevent one.

I won't be cowed. My lack of defense of Phil Lawlor earlier wasn't fear driven. It was driven by an ongoing confusion as to precisely how to EFFECTIVELY kill this monster. And I'm embarrassed to confess I still don't have it worked out.

Jack Rickard

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TECHNOLOGY FRONT

by Jim Thompson
Western News Service

POCKET WONDER—THE REX PC COMPANION

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For years I have tried to get myself organized. While my intentions are good, it just never seems to work out for very long. I travel a lot and it seems that I never have the information I need when I need it and all those little notes on slips of paper either get lost or are impossible to read. I had just about given up ever being able to organize things when I discovered a little gem called the REX PC Companion from Franklin Electronic Publishers.

The REX is a PCMCIA card that sports a glare-free LCD screen. Data from a personal information manager (PIM) is downloaded into the REX by simply plugging it into a Type II PC Card slot. If a PC card slot is not available, the downloading can be done through an optional docking station that connects to the serial port. Once this is done, you have all of your important contact numbers, to do lists, appointments, and memos at hand and easily available wherever you go.

It was developed through a partnership among three companies. Starfish Software (which makes Sidekick) designed, developed and produced all the software components of the REX. Citizen Watch Company of Japan produces all of the hardware including the REXPC Card and the docking station. It is sold by Franklin Electronic Publishers under the name of its subsidiary, Rolodex Electronics.

The REX is a true marvel of technology. It's the same size and only slightly thicker than a credit card (3 3/8 inches by 2 1/8 inches by 1/4 inch) and weighs only 1.4 ounces, so it fits easily into your shirt pocket without even creating a bulge. The high-contrast LCD screen (160 x 98 pixels) provides a viewing area that is nine lines long by 36 characters wide. This may sound smal, but I found it big enough to display significant amounts of data. I also found it easy to read in almost all lighting conditions.

In addition to the LCD screen, the REX has five buttons along the right side that allow you to navigate through the displayed data.

The REX comes with the TrueSync Information Manager from Starfish Software, which contains all the core functions of Starfish's larger Sidekick software package. This software allows hundreds of appointments, addresses, memos, and to do items to be transferred from your PC to the REX PC Card. If the TrueSync software is not to your liking, files and information can also be transferred from several other popular PIMs, including Sidekick from Starfish, Schedule+ and Outlook from Microsoft, ACT! from Symantec, and Lotus Organizer. You can also import data from dBASE III, dBASE IV, Spreadsheet Data Interchange Format (DIF) as well as from tab-delimited and comma-delimited formats. Starfish says it is working on other import formats that will be available on its web site (www.starfish.com).

I tested the REX with TrueSync, Schedule+ and Outlook, in all cases it was both accurate and fast. With a database of more than 1,000 contacts it took just 65-seconds to transfer the information via the PC card slot on my portable computer. The same information was transferred in about two minutes via the docking station.

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If you want to use programs or data formats other than TrueSync, you must first import the data into the REX software. This is a bit of a pain, but it does work. Also, by the end of 1997, Starfish will reportedly offer a standalone program that will allow you to synchronize the REX directly with most of the other popular PIM programs.

The main screen of the REX contains six icons corresponding to the major organizer data. The Calendar icon lets you review appointments by time and date. A second view of the calendar displays the allotted time for the appointment along with a location and any associated notes you might have entered into the PIM. A third view of the calendar provides an overall look at times that have been blocked on a weekly basis.

The Card File icon gives you a view of your contacts. The first page of data in this section lists the name and address of contacts on separate lines. A secondary view gives you additional telephone, fax and other numbers, notes and birth dates along with postal, e-mail or web addresses. Best all, you can select which of this data you want displayed.

The To Do icon lists your important tasks. Once a task is completed, you can use one of the buttons to mark it as completed.

The Memo icon lists the title of your memos on the first screen and the entire memo on the next screen.

The Clock icon displays two separate clocks — a Home clock and a World clock. The Home clock displays the time in your home city along with eight other time zones from around the world. The World time gives you GMT.

The Tools icon allows you to set or reset various functions including the local time, alarm sound and a password.

There are two versions of the REX. The REX-1, which has 128 Kilobytes of memory, holds up to 750 names, addresses, phone numbers, memos, etc. while the REX-3, with 256 Kilobytes of memory, holds up to 3,000 such items.

Two lithium batteries power the REX. I have not had it long enough to say for sure, but Franklin Electronics claims it will run for up to six months on the power cells under "normal" use.

The docking station, which allows the REX to be connected to a PC via the serial port, can be purchased with the unit or separately. It includes serial cable, batteries and a 9-25 pin adapter.

The REX is also quite rugged. I dropped the unit repeatedly and even threw it across the room at the wall (not something I would recommend, but it did help relieve my tension). The REX showed no ill effects from the abuse. I put it in my back pocket, sat on it and it worked. I would not recommend making a habit of this kind of storage since over time the unit will begin to bend and eventually break the contacts and electronics inside. In the final torture test, I deliberately spilled water on it (something that could happen if you were looking at it during a business meeting over lunch). I wiped it off, gave it a little time to dry and the REX was soon back on the job displaying my appointments and memos.

CONCLUSIONS

The REX is a true marvel of technology and a boom to people like me who need to keep track of various amounts of information and schedules but can't always lug around a laptop computer to retrieve the information.

Because of its extremely small size, the REX is not without its drawbacks. The major disadvantage is that you cannot enter data directly into the unit. Aside from the five navigation keys, there are no input keys or keyboard and you cannot use a stylus to write directly on the screen. All information has to be entered in your desktop or laptop computer and then transferred to the REX. Adding a keyboard would defeat the whole purpose of this miniature secretary. Still I would like to see a row of number keys on the REX and a calculator function.

I use a calculator all the time and had to have to carry a separate unit to get this function. It would also be convenient for entering a telephone number. I can't count the number of times I have been at a telephone booth and need to jot down a telephone number but don't have a pen, pencil or piece of paper.

The total lack of ability to input data can be a big disadvantage, but in most cases the convenience of size and weight makes up for this shortcoming.

Since you cannot enter data, there is also no search function for finding names or specific memos. However, you can move quickly and easily through the list of data with the buttons on the unit.

I like the REX. It gives me all the essential information I need in a highly portable, rugged and easy-to-use package. If you are looking for a unique gift for the technophile on your Christmas list, this is perfect.

System Requirements for TrueSync Information Manager:

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Your Next ISP May Just Be Your Cable TV Company

What You Can Expect

by William Stewart

OK, I have to admit it. I'm a technology junkie. I love new inventions, especially things for my computer. And, I've become totally fascinated with the Internet.

I've had full Internet service for about four years: tried everything from dial-up service to ISDN, shell to PPP. And, now I've taken the plunge to what must surely be the ultimate in here-and-now Internet access for the masses: the cable modem. Amazingly, I had almost no choice; the decision was pretty much made for me.

FAIT ACCOMPLIS

You see, my ISP is going through tremendous growing pains. When I lived in Georgia, this up-and-coming, highly respected national company, provided the finest level of service (especially technical support) anyone could expect. All that changed when I moved to San Diego nine months ago. Access to and quality of the local connection quickly deteriorated into the toilet.

The problem arose because the ISP owns and controls its POPs and backbone only in the Southeast (where the company originated). Because it services mostly non-business, dial-up customers, it leases facilities elsewhere in the U.S. from another national ISP that wants only business customers and backbone traffic. That strategy, in and of itself, would seem prudent for both companies; but, the upstream ISP continued to sell dial tone and bandwidth to other downstream ISPs with non-business, dial-up customers. That quickly created a cesspool of saturated POPs and limited bandwidth which effects not only the customers of my ISP, but the customers of the other ISPs. My ISP had been promising a fix real soon, but I, the techno-junkie, could not wait any longer. We had to part ways.

CABLE TELEVISION TO THE RESCUE

In San Diego there are two major cable television companies. Cox Communications entered the cable business in 1962 and is among the nation's largest cable television operators, with more than 3.3 million customers. The company wholly owns and operates eighteen cable systems throughout the United States. Cox's focus on operating a small number of very large systems has reached a critical mass. The company is headquartered in Atlanta, Georgia.

Southwestern Cable is a division of Time Warner Cable (TWC), the nation's second largest cable television operator (behind TCI). With affiliated companies, TWC serves 10 million customers in 37 states. TWC's focus is on operating a larger number of smaller systems, which typically results in superior customer support.

Of course, since cable TV is typically a franchised arrangement, neither company is in direct competition with the other here in San Diego. As you can see, both companies are very big. This has produced one of the largest pools of potential cable modem subscribers in the world. Even if San Diego can't seem to realize the Padres and Chargers at the pinnacle of their respective sports, we do have significant advancements in communications technologies and we do get the Super Bowl in January.

The service offered by Cox is called @Home (target market right there in the name). Southwestern Cable's service is called Road Runner (the name and cartoon character are directly from Warner Brothers).

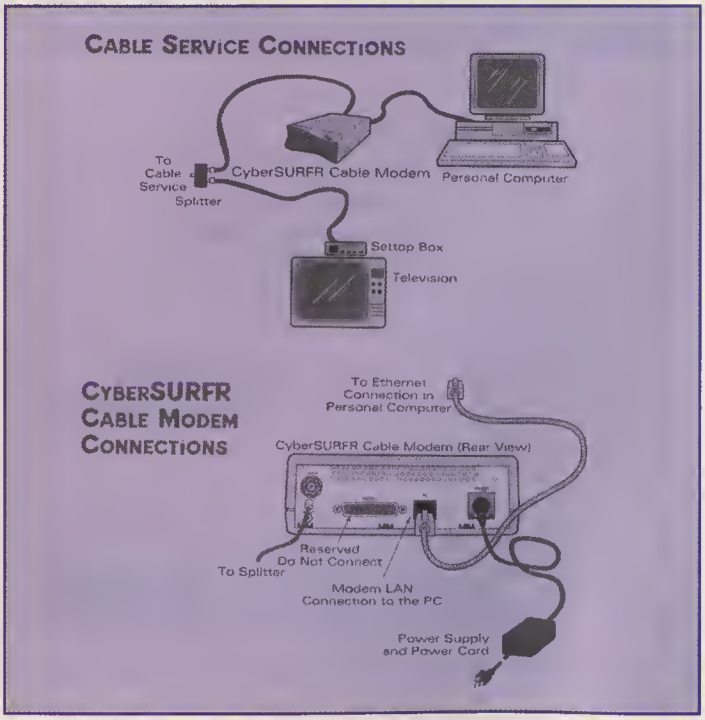
Since I live in the Cox Communications service area, the remainder of this article will focus mostly on the @Home system. The general system concepts, however, apply to virtually all the cable companies.

MY EXPERIENCE WITH CABLE

A friend of mine signed up for @Home service when it was first offered in San Diego. He's been singing the praises, and, of course, I've been fuming that he has such a good connection while I deal with an ISP that cannot deliver.

So, when I recently worked the San Diego Macintosh User Group (SDMUG) booth at the California Computer Expo, I was immediately drawn to the Cox @Home booth right next door.

Most unfortunately, I entered their booth with a chip on my shoulder. I had almost immediately formed a negative opinion



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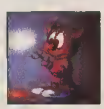

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of the company, simply because all I could see were Wintel machines all over the place. How could a company possibly offer a service like this to both PC and Macintosh users and fail to have even one Macintosh computer on which to demonstrate? My chip was soon knocked to the floor when a friendly Cox representative pointed next door and said that Cox had provided cable modem service to the SDMUG booth.

My volunteer shift didn't start for another couple of hours, so I waltzed over to a Macintosh 8600/180 in the SDMUG booth that was connected to the cable modem and decided I'd take a look. A large crowd had gathered around the computer. One of the SDMUG members was demonstrating what has to be the primary feature of cable modems — speed. After a few minutes, I was sold and went back over to the Cox @Home booth. Considering the Cox 30-day, money back guarantee, I decided to just jump off the deep end and take a chance on this new technology.

Application was simple. A very nice young woman looked up my current cable TV service information and added whatever was necessary to describe my computer (a PowerBook 5300c), the total RAM (48MB), the available hard disk space (570MB), my choice for UserID (wstewart@home.com) and password (no, I won't tell you). Then, she asked me when I'd like installation. The next available time was Monday at 10 a.m. I took it.

INSTALLATION

That had to be one of the longest weekends in history. Monday morning couldn't get there fast enough. About 9 a.m., the telephone rang, and a Cox @Home representative was on the line. I immediately thought the worst (they probably wanted to delay the installation until later in the week). No, actually they were, imagine this, ahead of schedule and wanted to come by early. I couldn't believe it. Of course, I said yes.

A few minutes later, two very friendly young men from Cox rang my door bell. One installer quickly started handling the cable issues (all I had to do was point him in the direction of the main cable entry) and the other installer started looking at my computer.

Although somewhat Macintosh literate, this was the installers first hands-on experience with a PowerBook. He quickly looked at my computer and froze. Uh, nowhere to install a network card. No, I didn't need one. I already had two Ethernet connections on the computer. All I had to do was reinstall the Ethernet drivers (the MacOS 8 installation somehow removed them) and we were cooking.

I began to think: how easy can this be? The installers had been there for 30 minutes, the cable and cable modem (a CyberSURFR from Motorola) were in place, and we had already got a connection. But, I seem to have spoken (well, thought) too soon. The computer technician was having problems getting the @Home page to work. Some portions of the page mysteriously failed to appear. Everything looked fine on other web pages, it was just the @Home page that didn't work.

I immediately suspected an HTML programming problem and told the installer so. He got out his own laptop (a Dell PC) and showed me what the page was suppose to look like. Then, he spent the next two hours (the installers are allowed three hours for installation) trying to solve the "problem" on my computer.

It turns out, the way @Home programmed its home page, it expected a black background (that's the Netscape default). But, I had changed the background on my computer to white, because I kept running into web pages where the programmers failed to recognize the consequences of using dark colors for text. It's extremely hard, at least on my computer, to see dark blue text on a black background. Besides, I had conjectured: who'd be crazy enough to actually program their web page using white text? Guess who? (`www.home.com`)

TEST DRIVE

After the installer located the problem and changed the background color back to the default, everything seemed to look fine and it was time to take the @Home service for a quick spin. We zipped through several different web pages and downloaded some software. A download of Netscape 4.03 took only four minutes (normally 49 minutes at 28.8 Kbps). Web page fetches and downloads were certainly faster than I had experienced with my Global Village 33.6 Kbps PC card modem, but screen draws still didn't look as fast as I had seen down at the Computer Expo. And, at least for me, they won't be.

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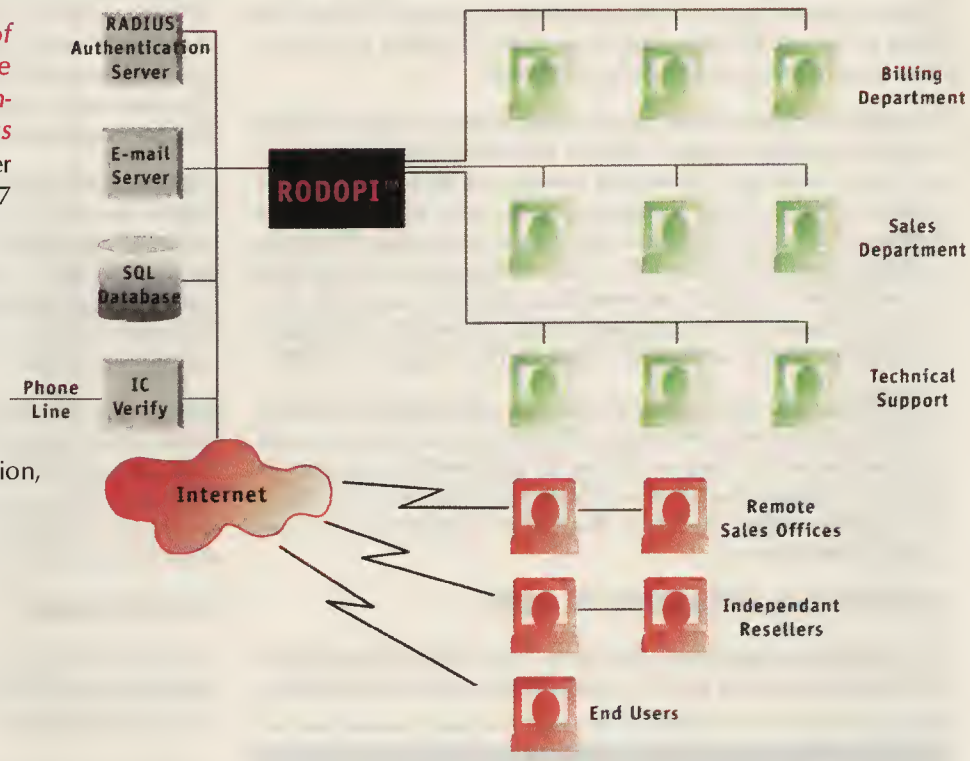

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The problem is my CPU clock speed. My PowerBook 5300c is rated at 100MHz. Although you'll get adequate performance from a PowerPC or Pentium at that clock speed, I highly recommend something more like 180MHz or greater if you want really snappy screen drawing performance.

By the way, you can leave your browser or any Internet application online 24 hours a day. @Home doesn't care. As more folks get connected to the @Home system, Cox will simply add more nodes (in Ethernet parlance, think of adding more hubs and routers to a fast and wide backbone).

The @Home system is fast, mostly because fiber is installed to the individual neighborhoods. With the Motorola CyberSURFR, you get up to 10 Mbps in download speeds and up to 768 Kbps in upload speeds. These theoretical limits are seldom reached because of bandwidth limitations external to the cable TV system (like the capabilities of the FTP or web computer on the other and the available bandwidth between that computer and you). But, it's nice to know you will get performance (especially downloads) far superior to that achievable with a 56 Kbps modem or ISDN.

Both @Home and Road Runner provide you with 5 Megabytes of web space for your personal web page. Additionally, you can set up your own web server (as long as it's not for commercial purposes). At this time, @Home doesn't allow additional e-mail account names, but it promises them real soon. Road Runner gives you up to five e-mail account names.

GETTING THE PASSWORD TO WORK

The installation seemingly complete, I signed some paperwork and decided to check out my e-mail. That's when I ran into the second major installation glitch. It seems as though the password I had requested at the Computer Expo would not work. The installers said they couldn't do anything about the situation, instructed me to call the @Home customer service 800 number and promptly left.

I found trying to reach an @Home representative who has the necessary authorization and tools to actually fix problems almost as easy as talking to the Pope (the difference being that if you ever did reach the Pope, he would probably be more helpful). I spent 28 hours and five telephone calls trying to get the password problem resolved. The first-level representatives kept pushing a new password. Everyone was very friendly, but the new passwords never took hold.

Finally, on the fourth call, I was passed to a second-level representative. I expected a long wait, but was pleasantly surprised when my call was immediately answered by a courteous, efficient and highly knowledgeable recorded voice informing me that all the support reps were busy assisting other high speed customers and that I had at least six minutes to wait. After being on hold for seven minutes, my call was quickly whisked off to voice mail anyway.

But, no one called me back, so I telephoned yet a fifth time and immediately asked for a second-level representative. After a little grilling by the first-level representative, I was passed through. Luckily, this time, I got right to a real, live person, and he reset the password (fixing the problem). Lesson learned: you certainly don't want to have to try to reach customer support that often.

COOKIE MAGIC

That problem solved, I decided to browse the @Home page to familiarize myself with its features. That's when I ran into my third major problem.

The @Home folks programmed their customer pages to require Java. They also expect to work with your browser's MagicCookie file. Of course, being a privacy rights advocate, I long ago deactivated my cookie file. The down side is, every time I try to access the @Home page, I have to answer some stupid dialog about setting my location. It seems the @Home folks want to store your location (it's San Diego, damn it!) in the MagicCookie file, so they can provide localized content each time you call. Seems like a good idea, but a bad implementation (you think they'd know where I live from their own billing database). I quickly changed my preferences so Netscape opens to e-mail and skips the @Home page altogether.

FEEDBACK NOT WELCOME?

Because I had, in just one day, already experienced more than my share of problems with the @Home service, I decided it might be nice to send e-mail to their installation feedback folks just to let them know of my experiences. I also decided to send e-mail to another @Home address, giving suggestions for additional features. And, I sent a third piece of e-mail to an @Home executive asking for assistance with information I could use in creating this article. At the time I'm writing this article, it's almost 30 days later, and I have yet to receive so much as an auto-reply to any of my messages. I ask you, does this sound like a company that listens to its customers?

After having such excellent technical support from my former ISP, I was very disappointed with the first-level support folks at @Home. Why couldn't they solve a simple password problem in a timely fashion? I am also disappointed the @Home folks fail to give a reply to feedback messages.

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All is not hopeless, however, because, just yesterday, I was able to actually speak with the head of @Home customer support. Profuse apologies were followed by an explanation that @Home was going through its own growing pains and that it was diligently hiring new folks to take up the slack in its first- and second-level support teams. I was told a myriad of new tools were on their way and @Home expects to have its support problems ironed out by the end of October. After all, the company spends about **$500** for the modem and **$250** in up-front personnel costs for each installation. It has a vested interest in keeping its customers. At least, I sincerely hope so.

ALTERNATIVES

Even considering my slow CPU and the support issues, I find cable modem speeds fast. If you're thinking about satellite, just remember you're still partially limited by traditional modem speeds (the uplink side of your communication will continue to go through the regular land-based telephone lines). Besides, a satellite connection is expensive (both initial investment and monthly outlay). I thought about trying one of those 56 Kbps modems, but I seldom get better than a 26.4 Kbps connection anyway. ISDN is pretty fast, but here in California, because of Pacific Bell's per-minute pricing, the service can get very expensive, very fast.

HARDWARE/SYSTEM SOFTWARE CONFIGURATION

The minimum Macintosh configuration is a 68040 or PowerPC CPU; 16 MB of RAM (@Home prefers 24 MB); OS 7.5.3 or higher; 50 MB of available hard disk space (@Home would like to have 100 MB free); a 2X or higher speed CD-ROM (for installing the @Home version of the Netscape software); and an Ethernet RJ-45 jack (if you don't have one, it can be install in most desktop or tower models). The minimum PC-compatible configuration is a 486DX 66MHz CPU; 16 MB of RAM; Windows 95 or Windows for Workgroups 3.11; 50 to 100 MB of available hard disk space; a 2X or higher speed CD-ROM; VGA or better video (SVGA preferred); an Ethernet RJ-45 jack; and a 16-bit sound card (optional).

SERVICE AREA

The specific services you receive will probably be different depending on your service area. There are currently about a dozen different cable modems being manufactured, and the cable companies do not seem to be settling on a standard. In fact, you can expect significant differences in bandwidth between the model your cable company chooses to install. I've heard of some cable companies allowing customers to purchase their own cable modems. But, here in San Diego, the cable company must furnish the modem.

COSTS, YOUR MILEAGE MAY VARY

Installation and monthly charges vary all over the place. For Cox customers with their own Ethernet connections, the installation charges are **$99.95**. Cox customers without Ethernet pay **$149.95**. Southwestern customers pay **$99.95** for installation, regardless of Ethernet needs.

Cox cable TV subscribers pay $39.95 per month and non-subscribers pay **$49.95** per month. The prices are **$44.95** and **$49.95**, respectively, for Southwestern customer. For Cox customers, the installation price also includes an Internet training session by New Horizons Computer Learning Center.

Although it's not a problem here, I've heard of some companies requiring a cable TV subscription before they will even consider installing a cable modem. I might even question whether this practice is legal.

Since I installed the cable modem, I got rid of my extra telephone line. Add the typical monthly ISP unlimited access charge ($20) to the charge for a separate telephone line ($20), and you can see how, at least for the Cox @Home system, cable modem service can pay for itself pretty quick.

There's also the intangible benefit of saving time. With all this speed, you'll spend less time searching for a particular web page or downloading files. Or, maybe you'll put all that extra time into doing more searches.

SUPPORT

As you can see from above, I had some significant support issues with the @Home installation. During the first 30 days of use, to my knowledge, I've lost access only one time. And then, only for a couple of minutes.

What mostly differentiates support at Road Runner from support at @Home is the centralized structure behind the Road Runner system. @Home locates its content, mail servers, news servers and second-level support in Mountain View, California. First-level support is in Ft. Lauderdale, Florida. Road Runner keeps the whole ball of wax in each town it serves. In theory, this should mean Road Runner is better able to handle installation and support issues (although I have no direct knowledge).

I highly recommend you ask many questions about initial support when you go looking into cable modem service. After you get going, you should find the service virtually worry free.

BOTTOM LINE

If you are a traditional telco-based ISP, you should consider the cable companies as serious contenders for your customers.

If you are a cable TV subscriber or live in an area served by cable TV, and you are more than a purely casual Internet user, you should consider the cable modem as a serious alternative for your Internet connection. It's fast, and when you factor in the cost of a second telephone line for a traditional Internet connection, it's reasonably priced. After you get past any installation glitches, the system seems to just be there every time you need it.

Yes, @Home is having some support issues right now, but I bet it will address them in short order. At least in my service area, cable modem service gets a solid three stars out of a possible five.◆

PRODUCT INFO:

@Home Cable Modem Service
Cox Communications
5159 Federal Boulevard
San Diego, California 92105
(800)234-3224
`http://www.home.net/cox@home`

William Stewart started his computer career in 1965, programming in assembler on an IBM 1401. Since then, he has worked with many main frame, mini- and micro-computer systems. From 1983 to 1993, he was a computer consultant to many well-known Atlanta-based companies. A Macintosh evangelist since 1984, he held numerous positions in the Atlanta Macintosh Users Group (AMUG), including one year as chairman of the board. He moved to San Diego this past December. Contact him by e-mail at wstewart@home.com

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WIRELESS Data Developments

by Steve Stroh

DO IT YOURSELF WIRELESS INTERNET ACCESS

Now that I'm on the Internet via wireless Internet access, I can confess that until October 1997, I wasn't. Over the last several months, I've put together a wireless Internet access system that works for me and my situation and finances, and I thought I would share it with you. The two primary components of my system are a Ricochet wireless modem and a Ramp Networks M3 dial on demand IP router, plus several Internet services.

I've written of Metricom's (`www.metricom.com`) Ricochet (`www.ricochet.net`) system in previous columns. Briefly, Ricochet is a true wireless Internet access system that makes use of "Part 15" frequencies (no FCC license required). Internet data to and from a user's Ricochet wireless modem are relayed between "Microcell Radios" which are typically mounted on streetlights, and eventually reach a "wired access point." Ricochet networks are currently operating in the San Francisco Bay area, Washington, DC, and the Seattle area, where I am located.

The data rate of the Ricochet wireless modem is 14.4 to 28.8 Kbps, which is adequate for casual use. Even at the lowest data rate, it's still quite acceptable considering that you can access the Internet anywhere there is Ricochet coverage — you're not tethered to finding a phone line. To me, the most compelling advantage of the Ricochet system is that you can stay connected to the Internet continuously. There is no need to disconnect as with telephone modems.

One of the primary goals for my Internet system was that access to the Internet not be limited to one PC — I wanted my wife and daughter to be able to access their e-mail accounts, surf the Web, and access the Internet without having to have separate modems, or sharing a phone line, or having multiple phone lines. Not to mention that there are always experimental PCs in my office that would benefit from Internet access — PCs running Linux, Windows NT, etc. Dial on demand routers using ISDN modems have become very popular for exactly this type of use. What I was hoping to find was a way to use a Ricochet modem and share it to the rest of the household. And, oh yes, reasonably priced, if not cheap. Proficient Linux users — yes, I'm well aware that Linux can easily do dial on demand routing and considerably more. I found a couple of very promising PC-based based products to dial-on-demand — Trumpet Firesock (`www.trumpet.com`) and Network Safety Corporation (`www.safety.net`).

The dial on demand system I decided to use initially is the Ramp Networks WebRamp M3 (`www.rampnetworks.com/products/m3/index.html`). The M3 is a dial on demand router that, instead of having a modem (typically ISDN) built in to the unit, has three serial ports that for external modems. The M3 is targeted at those users that can't use ISDN modems for Internet access. The M3 can combine the data from the three separate modems each dialed into an ISP to provide faster Internet access than is normally possible. Best of all, the M3 is reasonably priced in the **$300** range. I purchased mine from PC Connection (`www.pcconnection.com`).

The M3 is an impressive piece of engineering. Its features include connection optimized link technology, or COLT, data aggregation, 4port 10baseT Ethernet hub, a web-based interface for configuration, a separate console serial port and text based user interface (you can Telnet to it also) for configuration, a Dynamic Host Configuration Protocol (DHCP) server for automatically issuing IP addresses, and best of all, a network address translation (NAT) router.

NAT (defined in RFC 1631) uses a block of IP addresses that are specifically reserved as "non-routable" on the Internet and are intended for use in unconnected networks. If such a network were to become connected to the Internet, it would be a non-event because Internet routers are programmed to ignore NAT IP addresses. NAT routers "translate" NAT IP addresses to a single "real" IP address, and thus allow multiple computers to "share" a single IP address. NAT is ideal for homes and small offices with multiple computers requiring Internet access, especially if it can be embedded into dial—on—demand router. For a more detailed explanation on NAT, see Network Safety Corporation's explanation at `www.safety.net/in dnat.html`.

I contacted Ramp Networks and asked if the M3 would work with a Ricochet wireless modem and I was put in touch with a Technician who had formerly worked at Metricom. She told me that yes, the M3 and the Ricochet

Steve Stroh learned wireless TCP/IP networking as an amateur radio operator (callsign N8GNJ). He's one of the founding members of the *Puget Sound Amateur Radio TCP/IP Group* and is secretary for *Tucson Amateur Packet Radio (TAPR)*, a national not-for-profit amateur radio research and development corporation that specializes in wireless digital communications.

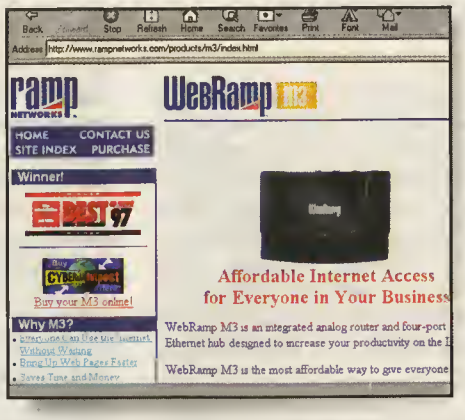
Professionally, he's a NetWare and Windows NT administrator for a large company. He's done battle with UNIX a few too many times and mostly lost, so now he's learning Linux and BSDi in preparation for his next UNIX challenge. Steve lives in Woodinville, Washington (in the shadow of Redmond) with wife Tina and daughter Merideth. He can be reached at `steve@stroh pub.com`.

do work together — there were just some specific settings that had to be used.

I still had some time left on my ISP account, so I decided to use the M3 in its intended configuration with a telephone modem. I won't go into too much detail, but in general, I wasn't very impressed with the M3's overall performance as opposed to having the modem connected directly to the PC. The main problem I had with the M3 using a telephone modem was that when the dial— on— demand was activated by a POP session, the POP session usually timed out without connecting — even though the M3 had established an Internet connection. I also had intermittent problems where the M3 Internet access simply stopped working, even though the M3 was still connected. My overall conclusion was that for dial— on— demand use, ISDN is by far the preferred method since it can set up the Internet connection within a few seconds. If an analog modem is to be used, you should plan on leaving it connected for the duration of your intended use — in a small office, nine hours on a typical work day, so that it doesn't have to continually connect and disconnect.

In contrast, my experience using the M3 and the Ricochet modem has been great. Of course, once I got the Ricochet wireless modem and the M3 configured, I haven't disconnected at all, and that's *bliss*! I've set my e-mail reader to check for messages every half hour, and walking up to my home PC and being able to read my mail from the disk rather than waiting for it to be downloaded has been great.

One of the reasons I was able to switch from my former ISP to Ricochet is that I had decided to move my e-mail, web page, and domain from an ISP to an Internet presence provider. Once I did that, it didn't really matter how I made my connection to the Internet — wireless, telephone modem, cable, dedicated line, etc. or who I connected through — Ricochet, a telephone based ISP, whatever. My choice of an IPP was Simple Network Communications, Inc. — SimpleNet (`www.sim plenet.com`). What I liked most about SimpleNet was that their prices were quite reasonable, especially for a small business, and they haggle with you about the size of your page or the number of hits. They offer a broad range of e-mail services, everything except mailing lists — anyone know of a reasonably priced provider of mailing list services?.



One of the things I was disappointed with my Ricochet modem was that the Ricochet news server didn't seem to be working well. On several of my favorite newsgroups there were far fewer messages shown than I knew were there — I was able to verify this by checking DejaNews (`www.dejanews.com`). (And yes, I did take the precaution of wiping out my current news.rc and related files so that the article numbers from the previous news server wouldn't be a factor.) I'd heard some good things about Supernews (`www.supernews.com`) and checked it out. If I really go into news withdrawal, I can subscribe to it for my news fix. I suspect that this will become more common as the spam/cancelbot wars rage on many newsgroups, and many ISPs simply decide that news isn't worth the work, bandwidth, price, or minimal returns and simply farm it out. Subscribing to Supernews appeals to me for the same reason that using SimpleNet does — freedom of choice of ISPs — if you need to switch, you can do so with very little impact.

Another disappointment with Ricochet is that they don't offer static IP addresses except for a higher priced service targeted at corporations. In fairness, there are only a very few enlightened ISPs who offer reasonably priced static IP addresses. Of course, where there's a need on the Internet, someone will sense an opportunity and it. In this case, CanWeb Internet Services Ltd. offers a service called DynIP (`www.dynip.com`) that registers dynamic IP addresses with a static name. This is usually done automatically with a small utility program furnished by DynIP. In my case, since I'm using the M3 and my PC actually is using a NAT IP address and my dynamic address isn't all that dynamic (unless I turn off the Ricochet wireless modem), I can probably update it manually.

Since I haven't yet found a reasonably priced provider of mailing list services, I've considered setting up a small POP and SMTP e-mail system on my home network. The one that seems to best suit my needs is Seattle Lab's SLMail (`www.seattlelab.com`). SLMail has received good reviews, is reasonably priced, and has versions for both Windows 95 and Windows NT. I was curious about the company and its products, so one afternoon I simply drove to its headquarters in nearby Bothell, Washington, and spoke with the principals. I was pretty impressed.

Here's some of the information that I had do a bit of digging to uncover:

- The Ricochet must be connected to Port 1 of the M3
- Modem Manufacturer: "Other (provide Init String)"
- Maximum Modem Speed: 14,400 bps (I had some long e-mail discussions with Ramp Networks on this setting. The M3 uses this setting to CALCULATE the actual port speed — the MMS is multiplied by four, so setting the MMS to 14,400 results in the M3 and Ricochet actually communicating at 57.6 Kbps. My thanks for Raghu Bathina for his assistance.)
- Modem Initialization String: atz
- M3 "Phone number to dial": 777
- Username, password: none (the electronic serial number is used for user authentication
- Idle Time (how long to wait before disconnecting): 0 (never disconnect) Ricochet primary DNS: 168.253.48.19
- Ricochet secondary DNS: 198.6.1.1
- Ricochet host name: ricochet.net
- Ricochet SMTP server: smtp.ricochet.net
- Ricochet POP server: mail.ricochet.net (must first set up POP account)
- Ricochet News server: news.ricochet.net

Lastly, for those of who don't have Ricochet service in your area or think that 14.4 to 28.8 Kbps is too slow... On October 13, 1997, Metricom announced that Paul Allen's Vulcan Ventures investment organization would purchase a controlling interest in Metricom for **$56 million**. Bob Dilworth, Metricom CEO said "His (Paul Allen's) investment will ensure that Metricom can deploy its next generation of high-speed wireless data networks rapidly..." Metricom has made several references in press releases to its next generation wireless network that run at 100 Kbps or faster. ◆

CONSUMMATE WINSOCK APPS

by Forrest Stroud

CABLE MODEM MANIA

After moving to College Station, Texas, I thought I'd be one of the last people on the planet to get an opportunity to try out the new cable modems. You know, the ones that everyone has been talking about but no one seems to have actually used? Well, thanks to the foresight and cognizance of two trend-setting companies here in College Station, TCA Communications and Myriad.net (`www.myriad.net`), I am one of the several hundred lucky individuals who have received the chance to check out this amazing technology as beta testers.

So far I couldn't be happier with the performance of this service. While not the panacea for all of your Net ills, cable modems do go a long way toward solving the World Wide Wait. Although the bottlenecks are no longer on my side, it would be even better if the rest of the Net were in such good shape. With a cable modem, you won't be waiting for your Net connection to finish downloading information, you'll most often be waiting for a popular web site to recognize your request. But that's a small price to pay for a service that delivers anywhere from ten to fifty times the performance of a 28.8 Kbps modem at a price that is roughly equal to that of a standard analog modem connection.

One final thought — don't despair if cable modems haven't arrived in your neighborhood. If College Station, Texas has cable modems now, you can bet the rest of the world won't be too far behind.

The applications reviewed here and many more are available at Stroud's Consummate Winsock Apps List, `www.stroud.com` and `http://cws.internet.com`.

Forrest Stroud currently works in College Station, Texas, as a web developer for Mecklermedia Corporation. He recently graduated, with honors, from The University of Texas at Austin. The Information Systems and Data Communications Management major enjoys spending what little free time he has with his wife Joanne and the "zoo" — an ever-expanding collection of dogs and cats that currently consists of a Dalmatian pup (Svoda Pop), a chocolate Lab cross (Roemer), a German Shepherd pup (Marius), and a pair of rascally kittens (Odie Pez and Bo Miggy). Animal lovers can check out pictures of the pets on Stroud's home page at `http://home.sprynet.com/sprynet/neuroses`.

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Company:	Macromedia
Website:	`http://www.macromedia.com/software/dreamweaver/index.html`

If the preview release of Macromedia's Dreamweaver is any sign of things to come, this is an app that has an excellent chance of becoming the dream tool for professional web developers. While a great text editor such as TextPad will likely remain the best choice for the routine maintenance of existing web sites, there will also continue to be a need for more advanced tools that facilitate the design of new web sites and the addition of critical new features like Dynamic HTML, Java applets, and cascading style sheets (CSS) to existing sites. Macromedia Dreamweaver is one app designed to combine the best of both worlds by offering an advanced visual HTML editor and an integrated HTML text editor in the same package. Although this is not entirely evident in the current preview release, due to its lack of an internal text editor, the good news is that the official release of Dreamweaver will include Allaire's HomeSite 3.0 as its built-in text editor.

While the text editor side of the equation will eventually provide you with the flexibility and control needed to maintain web sites of all sizes, the visual mode of Dreamweaver presents you with all the tools necessary to create high-powered, advanced web sites that are both attractive and informative in nature. The visual mode also helps to make Dreamweaver one of the more graphically attractive clients in its category. The visual editor's interface combines a quick and efficient WYSIWYG display with 3D icons that represent more advanced tags and hidden attributes like scripts, comments, and embedded content. Dreamweaver is also a total web package in that it integrates the dual editors with site publishing and synchronization tools. Once you create a new page or update existing ones you can automatically upload the page or pages to your web site without having to leave the Dreamweaver interface.

Dreamweaver is at its best when helping you integrate the latest HTML features into your web pages. The client makes it easy to add advanced features like Dynamic HTML, cascading style sheets (including layering), absolute positioning, scripting, plug-in modules, ActiveX controls, Java applets, and Shockwave content (including Flash and Director-based media). Dreamweaver also offers a set of visual design tools for creating forms, tables, and frames. A JavaScript Behavior library that allows you to create animations, sounds, alert messages, and other applets using pre-generated JavaScript coding is another of Dreamweaver's unique attributes. The behavior library even allows you to add your own customizable behaviors.

Additional design features include a repeating element library that makes changes to repeated content in all the pages of a site (allowing you to change all the headers and footers for your site at one time, for example), Dynamic HTML animation timelines for creating sophisticated animations that run in 4.0

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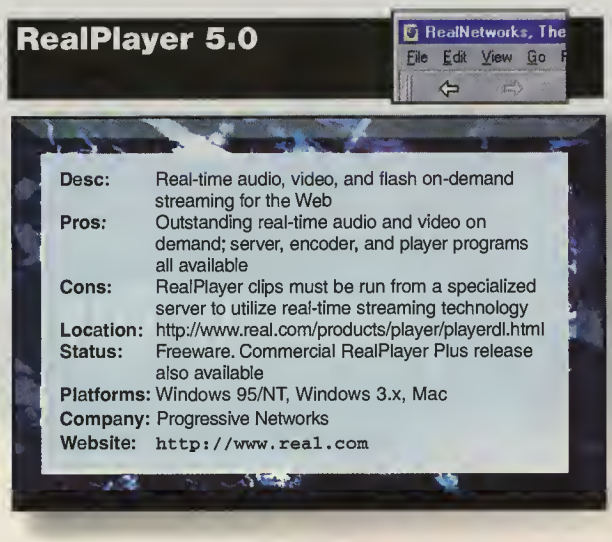
browsers without the need for plug-ins, a browser verification tool that identifies pages that won't work in a specific browser and reports the tags that are causing problems, and an HTML inspector window that allows you to see the HTML code generated in real time while you work in Dreamweaver's visual mode. Another beneficial aspect of Dreamweaver is that it preserves the content and structure of your HTML code for pages that were created in other editors. This contrasts with a client like FrontPage, which tends to add its own coding and make unnecessary changes to your existing content.

Although only in preview release, Dreamweaver already shows the potential of becoming the consummate tool for the design and maintenance of professional web sites. The only downside to what could possibly become the tool of your dreams is a price tag that does its part to ensure that your feet will remain firmly placed on the ground. Expect Dreamweaver to sell for just under **$500** after an initial release period when the product first ships. But if you do decide to buy the client during its official release, you'll be able to take advantage of Dreamweaver's introductory street price of **$299** for an easy savings of more than **$200**. While still somewhat expensive, when you take into account all of Dreamweaver's advanced features and its inclusion of Allaire's HomeSite 3.0, the **$299** price tag seems...well, almost dreamy.



RealAudio was the first client released on the Net that allowed users to download and run audio clips in real-time — i.e. the sound bytes run *while* being downloaded, not *after*. Since its initial release in June of 1995, RealAudio has continually evolved to stay one step ahead of the competition while still managing to retain its freeware status. Its affordability and reputation for outstanding audio quality are two of the reasons that RealAudio has become the most popular client of its type on the Net. Seeking to capitalize on its potential and augment its popularity, Progressive Networks (the developers of RealAudio) worked with Iterated Systems (developers of ClearVideo) to integrate ClearVideo's real-time, on-demand video streaming technology into the second generation RealAudio client. This latest version of the client, now called RealPlayer, makes it possible to view both audio and video clips on the Web at the same time. It also offers another technological breakthrough called RealFlash, which allows for Macromedia Flash animations to be played in real time and in complete synchronization with RealAudio content.

With the huge size of many sound clips (250+ KB not uncommon) and video segments (2+ MB) as well as the seemingly perpetual congestion of the Web, the audio, video, and flash on-demand streaming made possible by RealPlayer is indeed a blessing for many users. With only Shockwave and VDOLive as close competition (and even these apps pale in comparison to RealPlayer), RealPlayer looks to have the early lead in what will likely become an extremely intense race for market share. While RealPlayer's advantage is partly due to the large number of sites that serve RealAudio and RealVideo content, another important factor is the massive improvements made to the client in its two years of existence.

The RealPlayer client that combines RealAudio with the new RealVideo and RealFlash technologies is a far cry from the RealAudio player introduced just over two years ago. RealAudio's mainstay has always been on-demand streaming of audio, but recent features like live broadcast capability, improved sound quality for 28.8 Kbps (stereo sound) and higher (near-CD quality) Net connections, improved delivery technology, the real-time on-demand video capabilities of RealVideo, the real-time animation streaming of RealFlash, new commerce features (ad insertion capabilities, for example), and easy publishing tools for adding RealMedia content to your web site have taken the client to new levels. Additional features that have recently been implemented include bandwidth negotiation (for customizing audio quality to your connection speed), multicasting support, pseudo-streaming for small audio files, multimedia synchronization, and Java integration capabilities.

While there will continue to be a freeware version of RealPlayer available on the Net, a **$30** commercial version called RealPlayer Plus has also been released that improves on the freeware client by offering superior streaming video capabilities and PerfectPlay, a feature that makes possible near-CD quality audio and full-motion video even at speeds as low as 28.8 Kbps. RealAudio was the first real-time audio client to offer plug-in support for Netscape in both Windows 3.x and Windows 95 versions. Today, RealPlayer adds to these capabilities with inline web support for audio and video-on-demand content. Both Navigator and Internet Explorer can be set up to automatically play *.ra, *.rm, and *.rpm files — sound, video, and flash clips are not only run seamlessly from your browser; they begin playing almost immediately after clicking on the file.

Listening to and viewing RealPlayer files is just great for the majority of us, but there will inevitably come a time when some users want to create and serve their own files. Thankfully, Progressive Networks has already developed clients that will create (RealEncoder —`www.real.com/encoder/index.html`) and serve (Real Networks Basic Server —`www.real.com/server/basic/index.html`) RealPlayer files. The encoder client is freeware and allows you to create and host your own clips utilizing pseudo-streaming capabilities on any type of web server. However, to run clips on the Web in real-time, you'll need to download the free Basic Server client or purchase the more advanced client, which costs **$695**. (You can also download the high-end server for a free thirty day evaluation.) The freeware Basic Server is not eligible for phone support, does not include RealFlash streaming animation, and lacks some of the more sophisticated features of the commercial server release.

Overall, RealPlayer is a classy application that will appeal to anyone who has ever had to wait an eternity just to listen to a thirty-second audio or video clip. And with the prevalence of RealAudio and RealVideo files on the Web, this is one app you'll definitely want to have for your daily web surfing. There's even a TV Guide-type listing called Timecast (`www.timecast.com`) that lists all the RealPlayer content currently available on the

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Net. While there is still room for improvement in the quality of audio and video streaming technology, RealPlayer shows that you don't need to wait for the arrival of cable modems and ADSL lines in order to fully enjoy real-time, true multimedia content on the Web.

DiscPlay

Desc:	An excellent audio CD player with integrated online CDDB capabilities
Pros:	Outstanding interface and features, integrated CDDB and Windows traybar support, inexpensive price tag
Cons:	Lacks multi-disc randomize on a song by song basis, options menu could be better organized
Location:	http://www.nexgate.net/akash/discplay/discp404.exe
Status:	Free 30 day evaluation. Shareware - **$15**
Platforms:	Windows 95/NT
Company:	Obvion Systems
Website:	`http://www.obvion.com/discplay`

For many of us nothing beats popping a CD into our computer and enjoying a nice relaxing evening listening to the likes of the Smashing Pumpkins, Sublime, or the Mighty Mighty Bosstones. Regardless of your musical tastes, having your computer play your favorite group's CD in the background while you surf the Web, write a report for school, or develop a presentation for tomorrow's meeting can definitely help break the monotony and drudgery of normal computer work. If you fall into this group of CD audiophiles, you're probably familiar with the standard Windows 95/NT CD Player. The player is a great app considering its freeware status, and that it is an operating system add-on program, but it does lack several features that would make it even more useful. Thankfully, as with most add-on software bundled with Windows, third party vendors have rushed to the occasion to offer alternatives that more than make up for the shortcomings of their OS-bound counterparts.

DiscPlay is a great example of such a client. DiscPlay addresses the two most glaring deficiencies of the Windows CD Player — lack of Internet support and traybar support. It also adds a ton of useful tools that are cool to have at your disposal when playing audio CDs. The best of DiscPlay's features is its integrated CDDB Internet database (`www.cddb.com`) support. With CDDB you no longer have to manually enter the title and track information for each new CD you want to play — DiscPlay automatically connects to a CDDB database on the Net and downloads the CD's information the first time you load it into your computer. If you've ever had to manually enter the information for CDs, you know what a pain it can be, and you can probably guess how useful a service like CDDB is. Even if you haven't had the pleasure of this task, you'll quickly come to appreciate the extremely valuable (and free) CDDB service. And while there are at least ten different audio CD apps now available with support for CDDB, DiscPlay is by far the best of the bunch.

Windows traybar support is the second area in which DiscPlay capitalizes on one of the Windows Audio CD Player's biggest drawbacks. The standard DiscPlay icon resides in the traybar when the program is running and a simple click of the icon brings up DiscPlay's superbly designed interface. Additionally, you can add your own audio buttons to the traybar for controlling aspects like toggling between pause and play, stopping play, and reversing/advancing tracks (for skipping to the previous song or the next song). DiscPlay also offers all of the same great features found in the standard CD player, including support for multiple CDs, repeat and random capabilities (although DiscPlay does lack the CD Player's ability to randomize multiple CDs on a song by song basis), intro play, programmable options, and graphical toolbars for configuring its options.

Another cool feature in DiscPlay is the ability to create your own custom playlists. To do so, all you need to do is right click on selected tracks and add them to your list of favorites. If this sounds familiar, it should — it's the same type of system used for adding your favorite web sites to Internet Explorer. Additional DiscPlay features include advanced CD management capabilities, statistical features (for tracking the most recently played albums and songs), automatic scheduling options, scripting capabilities, extensive configuration options, and one of the most visually attractive interfaces you'll find in a CD audio player. In addition to its CDDB support, DiscPlay offers a plethora of Internet features, including the ability to search for sites on the Web with information on the current CD. You can use DiscPlay's Net capabilities to find sites that allow you to purchase the CD (or others by the same group) or you can have it look for sites with information on the artists themselves (including any available tour date information). At just **$15**, DiscPlay is a must-have application for CD audiophiles as well as a great addition for the more casual CD listener.◆

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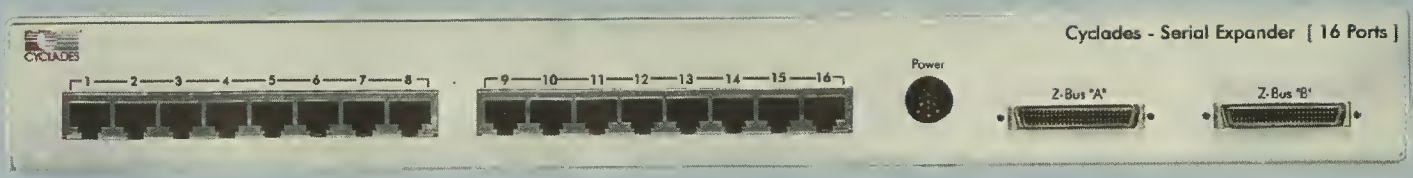

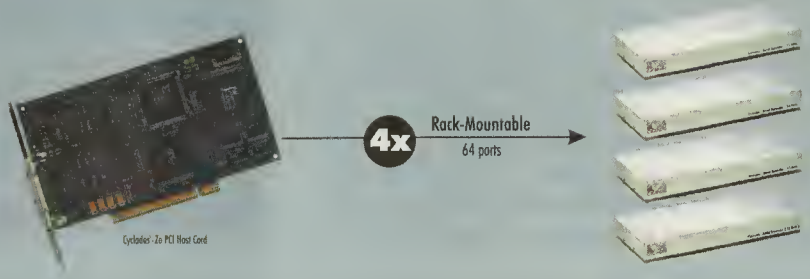

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Bus Interfoce/ Dota Transfers	True 32-bit PCI Master/Slave	8-bit ISA/8-bit PCI slave	8-bit ISA
Moximum nominal boud rote	921.6 kbps	Ranges from 115.2 - 460.8 kbps	up ta 115.2 kbps

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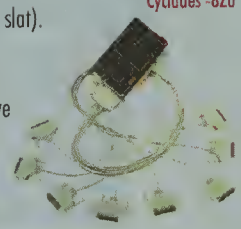

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TUCOWS

Scott Swedorski

WELCOME TO THE PILOTZONE

Scott Swedorski is president and founder of TUCOWS, The Ultimate Collection of Winsock Software. He lives in Flint, Michigan with his wife, Vicky and 2 daughters, Emily and Ashley. After joining the army at the tender age of 17, Scott received his degree in Computer Information Systems from Mott College, and received an Honorable Discharge after 8 years service. Scott welcomes input from Internet users and software developers at tucows@tucows.com.

Computers are getting smaller and more portable with each passing season. The most promising wearable computer to date is US Robotics' Palm Pilot. If you haven't seen one yet, run out to the local computer shop to get a hands-on trial, because you won't believe it until you see it in action. You can have up to a Megabyte of space in which to write, keep notes, keep a schedule and address book and even play games or read digital books, all on a PDA that can literally fit in a pocket. Here at TUCOWS, our team fell in love with the Pilot . . . so much so that we decided to roll out a new sister site: PilotZone www.pilotzone.com opened in September to rave reviews.

PilotZone will be the largest collection of Palm Pilot Software on the Web. Software sections include Communication, Connectivity, Development, Games, Graphic, Internet, Terminal, Business Productivity, Travel, Utility, and International. Software and updates have been collected, reviewed and archived by the TUCOWS team on the new site.

DOS, Macintosh, OS/2, Unix, Windows, Java and other utilities are available for developers. We anticipate that the popularity and simplicity of the Pilot will make it a very fertile new ground for budding developers. PilotZone plans to help make it easier for developers to access the tools they need to develop even more software for the Pilot.

3 1/2

Compact Application Solution Language

Version Number:	1.1
Revision Date:	August 24, 1997
File Name:	CASL32.exe
Byte Size:	1,754.341
License:	Shareware
HomePage:	http://www.caslsoft.com

Compact Application Solution Language (CASL) is a used to write programs for the Pilot. Designed to allow developers to quickly create applications for small computer environments, the Pilot version of CASL allows you to create applications that can be run in the Windows environment, as well as on the Pilot itself. This is your best bet if you are not a "power-user" who is already well accustomed to the vagaries of a particular language. There are several sample programs included that you can open and learn from. The shareware version does not compile some of the larger samples, and limits the size of the programs you can create, but it still gives you a good feel for the way the program works.

3 1/2

Alternate SDK

Version Number:	1.0a
Revision Date:	November 9, 1996
File Name:	asdklal.zip
Byte Size:	900,656
License:	Freeware
Home Page:	http://www.massena.com/darrin/pilot/index.html

ASDK is an alternative to the main programming tool for the Pilot, a program that is a Macintosh application. ASDK includes an assembler, a resource compiler, a Pilot emulator and debugger, a disassembler, header files, API documentation, and a handful of utilities to aid in the development of Pilot applications. In the future, expect a C compiler and other languages to the kit as well as more enhancements to make Pilot software development easier. You should also check out their web page for links to additional Pilot development tools, tips, Wade's Pilot Programming FAQ, and online discussions.

4

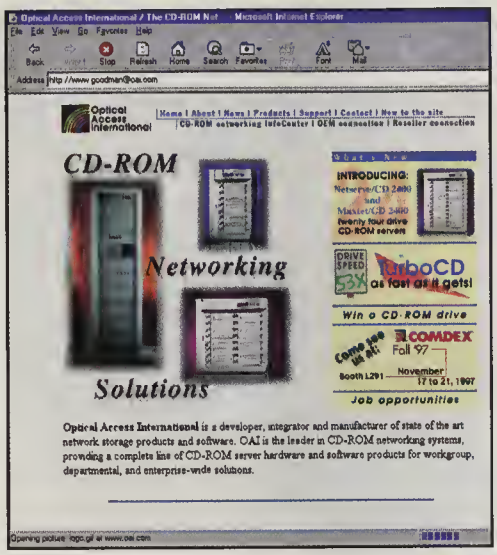
Runway

Version Number:	Alpha 3
Revision Date:	17-11-1996
File Name:	runway.zip
Byte Size:	1,031,383
License:	Freeware
Author:	darb@add-inc.com

Runway is a Windows 95 integrated development environment for the Pilot. It uses a PilRC compiler to generate the resource binaries, and a Pila assembler to compile the code. CoPilot is used as a debugger, and when the program has been compiled, the PRC file can be automatically installed using the InstApp utility.

The developer is honest about there being a few bugs in the alpha version, but you can't argue with freeware, and he's quite open to suggestions and feedback.

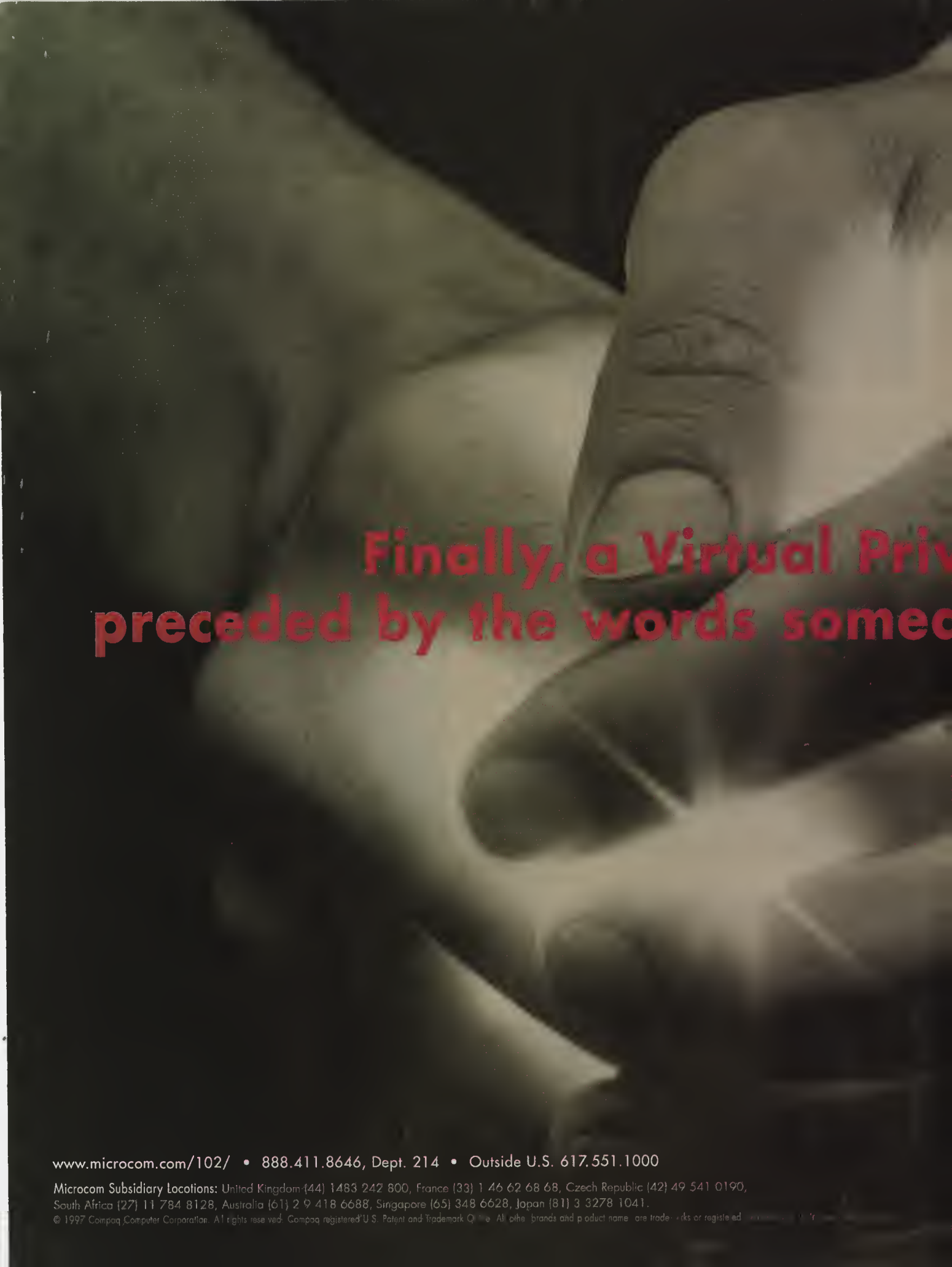
Pilot Icon Editor allows you to graphically create and/or modify icon resources on your desktop. The interface is very basic and easy to use, just fill in the dots, save your creations and upload them to your Pilot. Pilot Icon Editor has only been tested under Windows 95, but should work under 3.1.



Jump is designed to allow you to write Java applications for the Pilot. It is not an Internet-Java developer's tool and is not meant for running or writing applets for web sites. Jump takes the .class (Java) file and turns it into an .asm (assembly) file and then converts that file into a .prc (Pilot installation) file. Jump is a program that allows developers to write Java code for the Palm Pilot. Jump will not allow you to run or write Java "applets." It does allow you to use a simple language to write new applications for the Palm Pilot. Jump is essentially the back end of a compiler (a Java source-to-bytecode compiler is the front end).

According to the developer, The name "Jump" could be an acronym that stands for Java user module for Palm Pilot, but it was actually inspired during a late-night hacking session by the classic Van Halen song.

Future TUCOWS Columns will feature Pilot Picks as well as Windows, Mac, and OS/2 software. TUCOWS and PilotZone welcome your recommendations, tips, and ideas for supporting third-party software development for the Pilot. We can be reached for commends and suggestions at tucows@tucows.com.◆



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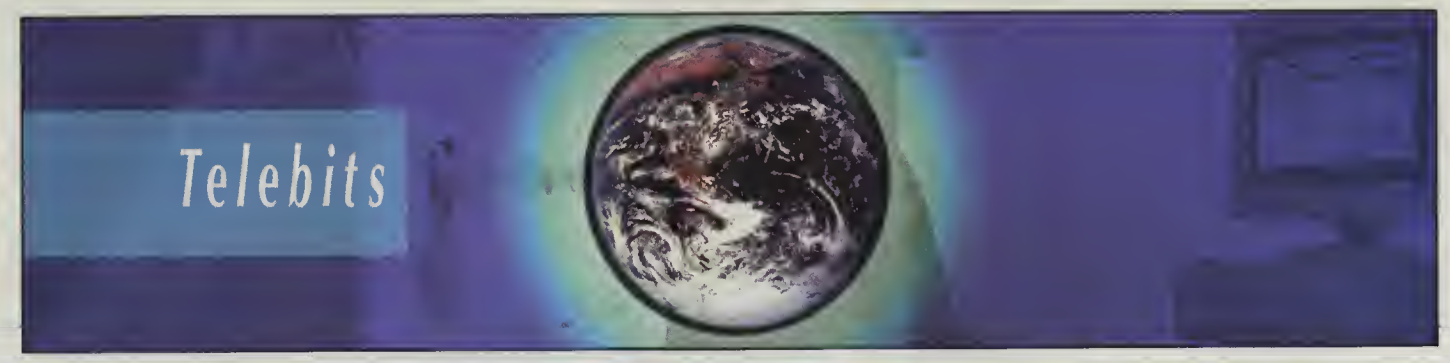

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SOURCE TECHNOLOGY TO DOCUMENT HIPER DSP

Source Technology, the largest supplier of 3Com remote access equipment to Internet service providers, will document the procedures for installing 3Com's HiPer DSP cards. Source's *Open Me First* is a 14-page manual that the company ships with every unit. It details step by step what the ISP needs to do to get the unit up and running. Source Technology claims that most ISPs who have some experience with telecom equipment can set up a Total Control server within two to three hours.

The company sells 3Com/US Robotics equipment only to ISPs. Source bills itself as the "Saturn of the ISP business," after the U.S. car maker which sells its cars in a non-traditional way. Just as Saturn's customers pay the sticker price for a car, Source Technology's customers pay one price for 3Com equipment. There is no haggling over price. As a result, ISPs don't need to rely on consultants who rep for hardware vendors as a way to bill more service hours. Source's *Open Me First* is meant to allow ISPs to do all the work themselves — usually in less time than a consultant could.

HiPer DSP, 3Com's new upgradable modem card for its Total Control server, does not install like other plug and play devices. ISPs need to configure the cards for T-1 or PRI, flash-upgrade the net server and network management card, and install 16 additional megabytes of DRAM on the network management card. The new *Open Me First* book documents all of those procedures.

Source Technology can be reached at **(888) 765-5758** or on the Web at **www.source-technology.com**.

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Silicon Valley businessman Tony Cole is selling the parts as mementos of the time when a computer took up an entire room and was cooled by liquid nitrogen. It wasn't that long ago. A Cray I Memory Board is **$150** and a corresponding ECL logic board is **$200**. The set of both is **$300**. The Cray II memory and ECL-2 boards Limited Edition go for **$149** each, or both for **$250**. A Cray III module board is **$300**. Each comes with a certificate of authenticity. The pieces are available online at the web site of Cole's company, MemoryBilia (**www.memorybilia.com**), or by phone at **(415) 525-1212.**◆

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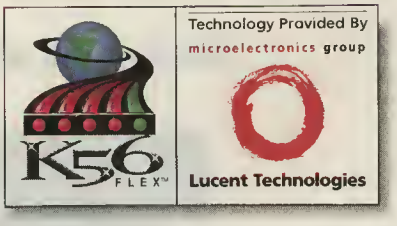

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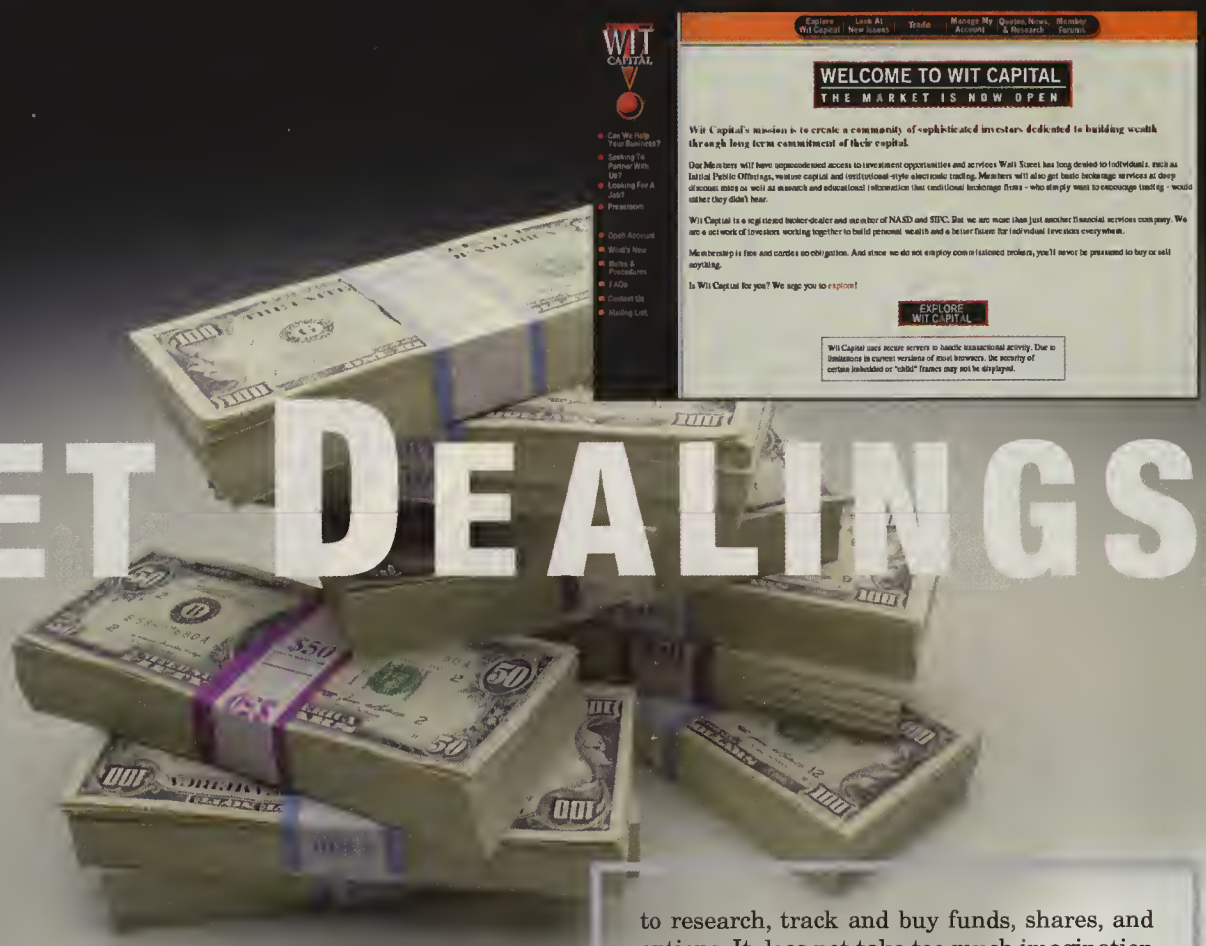


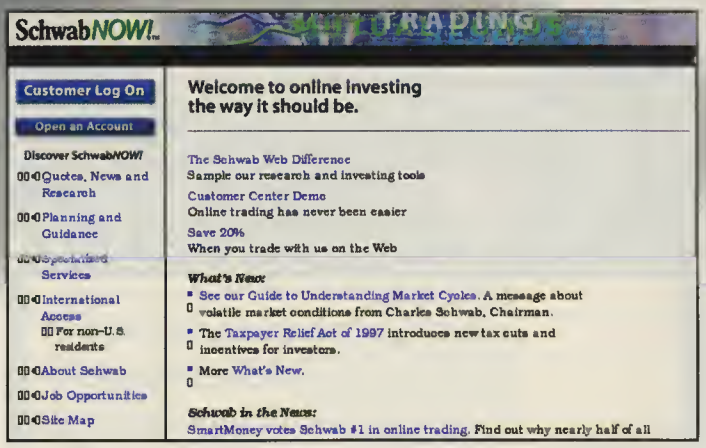
by Chris Lewis

Everybody's future is affected by the performance of the financial markets. If you save in a 401k or other retirement plan, if you have any kind of variable rate loan, if you depend on a company to pay you a wage, you have a real interest in healthy financial markets. One of the great things about the financial markets is that there is something for everyone, in terms of how you want to get involved and what your tolerance for risk is. At one end of the spectrum, if investing bores you, you can delegate the work to any number of companies willing to do the work for you to minimize your risk. At the other end of the scale you can make all your own decisions and get involved in gambling that makes roulette look like a predictable bet. It all depends on your level of tolerance for risk.

The investment industry will arguably be most profoundly affected by the Internet in the next few years. Already there are simple ways to research, track and buy funds, shares, and options. It does not take too much imagination to see large swathes of investment advisors, market data vendors and even exchanges made useless, or at least far less significant by the potential of the Internet.

Put simply, market data vendors sell a product that collects information from exchanges, normalizes it and redistributes that data in an easy to access format to geographically dispersed users (remarkably like the Web). Investment advisors have access to these products to track, analyze and review potential investments for clients. In my experience, the value added by these advisors is that they have access to information through market data products that would be too expensive for individual investors to afford. Today, Internet sources inexpensively collect, normalize and disseminate all the necessary information for any type of investor to make and execute their investment decisions.

Beyond investment advisors and market data vendors, the role of stock exchanges may be fundamentally altered. A brief look at `www.witcapital.com` (managed by the Spring Street Brewery) should open your eyes to what may be possible in the future as access to the Internet becomes more secure, reliable and ubiquitous. I first came across Wit through my love for microbrew beers. Wit brews Belgian



style wheat beer of exceptional quality out of St. Paul, Minnesota. The founders came up with the novel idea of letting the people that have most interest in their product (their loyal consumers) to buy stock in the company directly, without incurring the expense of traditional brokers and stock exchanges. Some of the powers that be in the investment industry didn't like this and tried to stop it, but there was nothing anyone could do to stop someone from selling something that belongs to them to a willing purchaser. So, Wit (as far as I know) were the first to bypass traditional stock exchanges and offer shares in their company directly over the Internet.

This early success has inspired Wit to plan more adventurous facilities through their web site. If you open a brokerage account with Wit, you get all the usual quote, news, chart information and discount dealing, but you also get the opportunity to participate in initial public offerings (IPOs) and, if you have enough money to start, private placements. IPOs are regulated by the SEC and most commonly, only subscribed to by institutions and their most favored clients. IPOs are the first offering of stock to the public and more often than not, provide the stock at its lowest price. Imagine having the option to put a few thousand bucks in to the first issuance of Microsoft or Cisco stock, you would have received more than 300 times your money back in either stock by now. Maybe not all IPOs perform as well, but it only takes one or two that do to make a real difference to your personal wealth. Being regulated by the SEC, anyone can participate in IPOs, private placements are similar vehicles, but are not regulated and therefore it is more restricted who can get involved in them.

Beyond these services, Wit plans to show people how to get better prices for transacting listed securities by trading with other Wit Capital members on a digital exchange. The main advantage of this is that the spread between bid and ask price advertised by either market makers (for the NASDAQ) or specialists (for exchanges like the New York Stock Exchange) can be eliminated.

I think it unlikely that the digital exchange concept will completely replace traditional exchanges. It is more likely that exchanges will move more into classifying companies on some sort of risk scale. For example, if a company is listed on the bulletin board on the NASDAQ, you know that it is more risky than something listed on the main OTC market. This is of course, a far diminished role for the exchange compared to what it does at the moment.

In any case, as of now, the Internet can assist you in your financial market dealings no matter what your objectives and risk tolerance. In this article, we'll look at three broad categories of investors, and a selection of the resources available to them. These three categories are as follows:

- **The Delegator** — a person investing for the long term, with no interest in investing directly in individual companies.
- **The Stock Picker** — a person interested in selecting and investing directly in companies that match his or her risk profile and objectives. To do this, you have to believe you will either time investments or pick better stocks than a professional fund manager. This is achievable in many instances if people restrict themselves to investing in the industries they know well.
- **The Lever** — A person interested in using the leverage available through derivative products (options and to a lesser extent futures) to seek the highest returns possible.

Typically, investors use a mix of all three category activities.

THE DELEGATOR

The typical delegator seeks to invest money in mutual funds and, over the long term, reap a return that is greater than that available from a savings account or other fixed-income vehicle. Since 1950 this has been a pretty safe bet. The equity markets

have significantly out-performed any kind of interest-based investment, as long as you could leave the money in the investment for three years or more. There are sound reasons for investing in this way. First, to reduce risk, you need a portfolio of 20 or more diversified stocks and buying into a mutual fund allows you to do that without a ton of money. Of course, you pay for the manager to manage your money and it is very difficult to get a return that beats the Dow industrial average if you are managing a large portfolio. In fact, most fund managers do not beat the index over the long term, which has given rise to low-cost, passively managed tracker funds that emulate an index. A good example of this is a fund that trades under the symbol SPY, and tracks the S&P 500.

If a delegator gets a little more adventurous and feels he can pick a sector, or time an investment in the market, he can swap into different types of funds at different stages. For example if the delegator believes the semiconductor industry is ripe for some growth, the SOX index allows him to get in to all the semiconductor companies in one fell swoop. Alternatively, a delegator may decide that the market is ready for a correction, take money out of equity-based investments and invest in a bond fund (one of my favorites is the Salomon Brothers High Yield bond fund, SBHYX).

If this description matches the way you want to invest in financial markets, examples of sites that are worth a visit include the following:

Fidelity (`www.fidelity.com`) offers arguably the widest range of funds available. It is cheap and easy to swap between the Fidelity family of funds as your view of various markets change. The Fidelity site will also allow you to buy funds managed by other companies, as well as individual securities. Fidelity provides free access to Reuters' news service, but levies a charge per inquiry for real-time stock quote prices. This charge is offset by credits awarded for every transaction you make.

Putnam (`www.putnaminv.com`) also provides a diverse family of well-managed funds to suit most tastes. Putnam uses its web site as an advertisement and an information source for investors; it doesn't offer online dealing.

Schwab, the original discount broker house, offers Schwab OneSource (`www.schwab.com`) for those wishing to invest in Schwab mutual funds and e.Schwab, for those interested in trading individual stocks. Schwab's site gives you unlimited access to stock quotes, charts, news and research. The regular Schwab web trading account gives you a 20 percent discount on commissions over those charged on the phone, with e.Schwab charging you **$29.95** per transaction.

If you are going to place most of your investments in professionally managed funds, you need to track who is managing them. Any change in a fund manager can signal a change in return and risk, so the best advice is to follow the manager, not the name of the fund.

THE STOCK PICKER

To become a stock picker, you have to believe one of two things; either that you can pick a selction of securities that will give better returns than a passively managed index tracker fund, or you can time when to get in and out of a market to take advantage of market peaks and troughs. Investment professionals that are of the more smug variety claim that the stock market perfectly values all securities, and it is a crap shoot to pick one stock over another. Also these professionals say that it is not possible for the average investor to beat market returns by selling at peaks and buying in troughs.

My experience tells me otherwise. A professional fund manager will have a lot of money to invest and will invest in many different companies. The more companies you invest in, the harder it is to beat the average market return. By investing in more than twenty or so securities, you are lowering your risk, but almost guaranteeing you will not beat the average return over the long term.

So what do you need if you think you can pick stocks that will outperform the average? There are two approaches, the fundamental and the technical; each approach requires a different input. Fundamentalists look at economics: Things like unemployment and GDP on the grand scale and market share, management, earnings and profitability for individual companies. A fundamentalist will form a view based on what he thinks the economy will do, the sector the company

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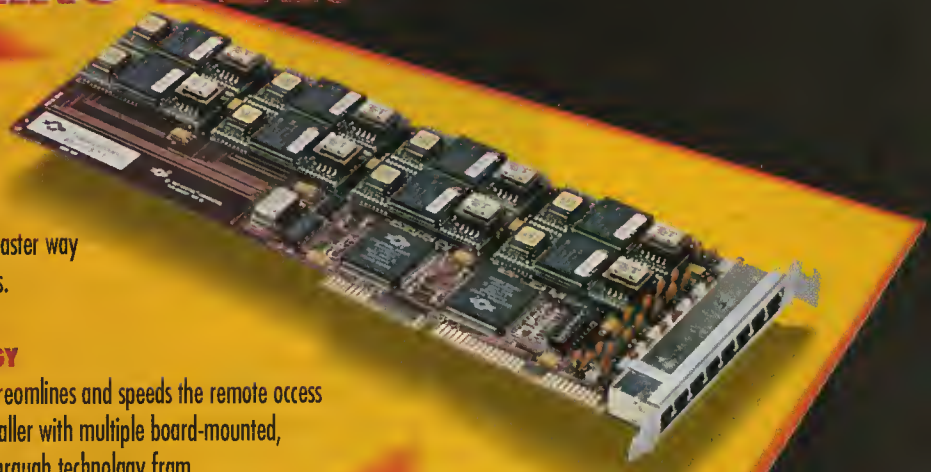

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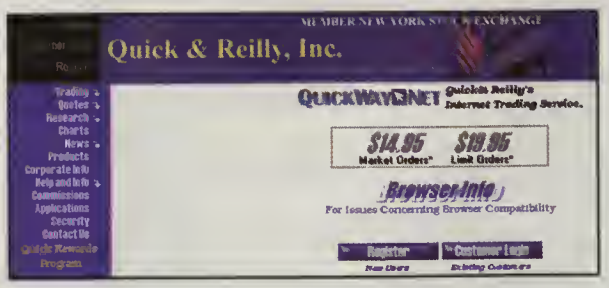
is in and how he thinks the company will capitalize on its opportunities.

A technician believes that all these things do in fact drive the market, but there is a short cut in the analysis. The technician's view is that all we are really interested in is price movement of a security, so why not study just that? Given that there are lots of economists and fundamentalists in the market, often with conflicting stories, the technician says the price movement of a security is the sum of all views, in essence the market view of what something is worth. Technical analysis is really a study of market psychology, as portrayed by the movement of price over time. You can find out more about technical investing from the Market Technicians Association at `www.mta-usa.org`.

Examples of sites that cater for the technical approach include `www.alphacharts.com` and `www.e-analytics.com`. E-analytics especially have solid reviews, their views on what is good and bad in terms of available software almost exactly correlate with my own. If you favor the technical approach, I strongly recommend reading `www.e-analytics.com/techten.htm` to start.

Most people end up using a mixture of both approaches; it is up to you to find out which works best. People can make money with either approach, or a mixture of the two: There is no one right way to do it: You just have to find an approach you feel comfortable with.

Looking at the fundamental approach, first you need access to news and research. This is normally supplied by full service brokers that will tell you what their market data screens inform them when you ask. The price you pay is in higher commissions by using this type of broker. However, we have already seen that you can get free news from Fidelity, and if you go to `www.ml.com`, you will get decent charts, links to listed companies home pages, and analysis of exchange traded instruments, such as the most active issue that day.



In-depth research is a bit trickier to get for free; however, if you are interested in buying a company listed on the NASDAQ exchange, the job is fairly easy. NASDAQ gives online access to Edgar, a database of company listed SEC reports. Go to `www.nasdaq.com` and if you are Java-enabled, click on the NASDAQ logo to get to the new NASDAQ site. Once there, select "Get stock reports on NASDAQ", then "SEC filings" for your selected symbol (you can do an alphabetic search for a company symbol from the security look-up link). The amount of information available from Edgar is amazing, you get merger activity, competitive outlook, detailed financial reports and much more. Many of the expensive research services base much of their information on what Edgar holds.

NASDAQ also provides a good set of links to other sites, which is listed under "Investor Services" and "Market Data." This will get you to all the other American and most of the international stock exchange web sites.

There really are hundreds, if not thousands, of sites offering data in this field. A good place to start that has links elsewhere is `www.thewebinvestor.com`.

Now seems like a good time for some golden rules of the fundamental approach to stock picking.

1. There is never a need to rush into buying any security: If it is a good stock, opportunities to buy will come around regularly.
2. It is always better to get a great company at a good price, than a good company at a great price.
3. Only get involved in companies you believe have long-term potential. It's easy for the market to suddenly take a dislike to even the best of companies with little cause. If you believe in the company over the long term, you won't mind holding on to it until the market comes to its senses.
4. Over the long term, the management of a company has the biggest impact on the share price. Managers that have a history of creating wealth for their shareholders are worth following. News stories that tell you of a successful manager moving to a new company are worth investigating.

Beyond these rules, it's down to what you know about the industry the company operates in, and how it stacks up to its competitors.

If this is your type of investing, there are many sites that will help you execute trades online. Schwab and Merrill Lynch

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have already been listed. E-Trade (www.etrade.com) offers deep discount trading (trading over the Web for as little as **$19.95** per trade), plus news, earnings estimates, charts, and fundamental data (price to earnings ratio, yield etc.).

Arguably the most comprehensive source of investment decision making tools available on the Internet (for which you do not have to pay a subscription) belongs to Quick & Reilly (www.quick-reilly.com). The catch is you have to hold an active account with them to get access to the data, but they do give you an awful lot. Through Q&R, you get access to research (via investools), company profiles via Reuters, Zack's company reports, intra-day market analysis from Briefing.com, as well as the usual quotes, charts, news, and portfolio tracking tools.

However, for low-as-you-go commission rates, you should look at Waterhouse Securities or Ameritrade. Waterhouse (www.waterhouse.com) can do most trades for around **$12**, plus free quotes and charts and lots of information from S&P, like stock reports, a forecasting newsletter and tax guide. Ameritrade (www.ameritrade.com) offers very low cost trading at **$8** per trade. Ameritrade offer free delayed quotes, real time quotes for a fee, market research, plus online transaction history, and auto-callback for trade confirmation.

THE LEVER

If you buy into a security or exchange-traded index, the probability is that you will have the option to trade in derivative products as well. Infrequently traded instruments do not necessarily have derivative products associated with them, but the more common securities do.

Derivatives are simple to understand and can significantly reduce your risk of investing, as well as provide you with infinite risk, it just depends how you use them. Broadly there are two types of derivatives, futures and options. Futures contracts are mainly for institutions and are a commitment to buy or sell some thing at a predetermined price, on a predetermined date. Of more interest to the individual are traded options.

It's easy to get confused by options terminology, but in reality it's very simple. The first thing to do is think of an option as a contract that people can buy and sell on to another party, just like any traded security. There is therefore a price to buy an option from an options trader, and he will offer you a different (and lower) price if you want to sell him an option.

Options are of two types, a put, or a call. A put is an option to sell a security at a given price some time between the time of purchase and the expiry date of the option. A call is an option to buy a security at a given price some time between the time of purchase and the expiry date of the option.

The place to get all your options information is www.optionscentral.com. This site is provided by the Options Industry Council to promote the use of options products and is a very useful site indeed. If you choose to use an online trading service that does not provide options quotes, you can get them free from here.

There are dozens of ways that options can be used, but the most common three options strategies employed by individuals are shown below (all prices are as of market close on October 1). These strategies are not recommendations, they merely serve to illustrate the principles of the trading action.

Strategy 1 — The Protective Put: You hold 100 shares of Cisco (symbol CSCO), which is currently trading at 74¼, but are worried about a correction happening in the market within the next six months, significantly reducing the value of these shares. Buying a put option in this case is like buying insurance to protect your investment. If you call up an options chain on the Optionscentral web site, you will see that the ask price for the April 1998 put for Cisco at 70 is **$7.25**. If you buy one contract of this put (one contract covers 100 shares) the cost is **$725**. The insurance this gives you is the right to sell the shares at **$70** at any time up to the expiry of the option in April, no matter what happens to the value of the security itself. As you hold the stock, you will benefit from any appreciation in the value of Cisco, and the put option covers you in the event of a slide in value.

Strategy 2 — The Covered Call: You bought 200 shares of Motorola on September 22 at 67 and see that the stock is now at 71⅝, you want to keep the stock, but can't see it reaching **$75** within the next six or seven weeks, although you would be happy if it did. You can increase your return from this stock by writing a covered call. In this case you call up the options chain on MOT and see that the bid for a **$75** call in November is priced at 2½. If you write two contracts for this call, you will be paid **$500** (each contract covers 100 shares). By getting this premium, you give someone the right to buy the stock at **$75** at any time up to the third Friday in November (options contracts always expire on the third Friday of every month). Many investment professionals don't like this strategy because it gives you no protection in the event of a slide in stock value, and limits your upside potential if the stock takes off (in this case, if Motorola goes to **$100**, the person you sold the call to will exercise the option and take the stock away from you at **$75**).

In reality, 80 percent of options contracts are never exercised, they expire worthless, so I suspect investment professionals don't like you doing this because you get money out of them instead of vice versa by following this strategy.

Strategy 3 — The Speculative Call: You see that Western Digital (WDC) has taken a tumble to 37⅝. You think this is an overreaction by the market and believe that WDC will climb back **$5** or **$10** per share in the next couple of months. One way to capitalize on this without tying up capital on the purchase of the stock is to buy a call. Lets say you call up the options chain on WDC and see the November 35 call costs 4⅞, so to buy one contract costs **$488**. For every dollar that WDC appreciates, the value of the call goes up roughly a dollar. Lets say that in the next week or two WDC goes to 42, this will double the value of the call you bought and you will have doubled your money. This is a risky thing to do, as if WDC stays below 35, your option will expire worthless and you will lose all the **$488** paid.

It may be interesting to look at these examples in February 1998 to see the outcome of each trade.◆

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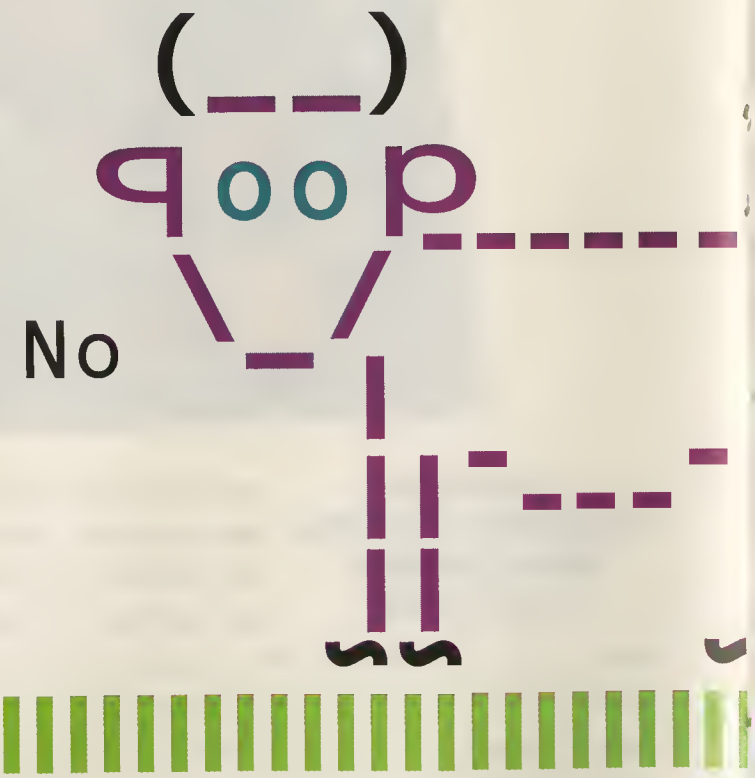

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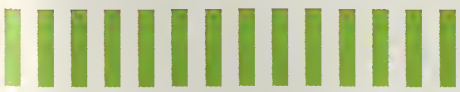

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Online Trading Not Ready for Prime Time

by Steve Clark

Toward the end of certain decades, October seems to be the month for the stock market in the United States to collapse, or at least lean toward implosion. The Great Depression followed the crash of October 1929 and lasted over a decade until the U.S. joined World War II. The October 1987 crash proceeded the largest sustained peacetime growth in U.S. history, but lead to a recession that lasted until the Gulf War.

This decade is different, however, since the stock market plays a different role in the economy from years past. No doubt, much of the strength in the U.S. economy is its high-tech sector. In it, employees are often paid with modest salaries and liberal stock options. Throughout the Silicon Valley, there are thousands of startups filled with individuals who, in addition to building the latest high-tech gadget, keep a watchful eye on the PointCast network that runs a stock ticker across the bottom of their computer screens. The Valley lives and dies by the stock market. After spending months getting their feet in the doors, job seekers have been turned away at the last minute when the companies for which they are applying are "downgraded" for not meeting "analyst's expectations." As employers, the companies will say, "Give us a call next quarter when the stock rebounds."

Given the Valley's obsession with Wall Street, it's no surprise that online stockbrokers have enjoyed enormous success. Since so many high-tech types use the stock market as their lifeblood, this online trading idea works out well. Traders don't need to call their stockbrokers to do a transaction, it can all be done online. As an employee, it looks like you're working while you're buying and selling stocks — possibly the stock of your own company. Stockbrokers themselves can be of a different breed, too. No longer do we see the sea of cubicles and stuffed white shirts at a stockbroker's office. Instead, anyone who can set up a web server (and who can't, these days?) and a back-end connection to the Nasdaq and the NYSE can be a broker.

THIS YEAR'S CRASH

By Monday morning, October 27, news of foreign markets collapsing hit investors in the United States. This crisis represented an opportunity for most wise investors who realized that they could buy valuable stocks at discount prices. The fire sale on Wall Street had begun. Investor confidence is so often a factor in the world's financial markets, and on this day, confidence was high. Investors knew that the market would not stay depressed for long.

By the end of the week, everything was close to normal. Stockbrokers, who made huge commissions on the over 1.2 billion shares that were exchanged on Tuesday, were smoking cigars and drinking martinis after the market closed Friday afternoon. The net result was a whole lot of trading, and a massive reshuffling of cards for investors. Prices fell investors saw an opportunity and bought huge quantities of stocks. Over time,

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Bidwell & Company	www.bidwell.com	$30.00	MCI
Bull & Bear Securities	www.bullbear.com	$19.95	Near Net (GTE)
CompuTEL Securities	www.rapidtrade.com	$11.95	currents.net
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DLJdirect	www.dljdirect.com	$20.00	UUNET
E*Trade	www.etrade.com	$14.95	PSI
e.Schwab	www.eschwab.com	$29.95	Near Net (GTE)
Empire Financial Group, Inc.	www.lowfees.com	$22.00	Pacific Bell
Fidelity WebXpress	personal.fidelity.com	$28.95	DECUS
Investex Securities Group	www.investexpress.com	$13.95	AWWG (MCI)
Jack White & Co.	www.jackwhiteco.com	$33.00	GTE
JB Oxford	www.jboxford.com	$15.00	UUNET
Money Garden Financial Group	www.forexmg.com	$ 5.00	New York Internet Center
National Discount Brokers	www.ndb.com	$14.75	PSI
Net Investor	pawws.secapl.com/invest.html	$29.00	UUNET
Pacific Brokerage Services	www.tradepbs.com	$15.00	Cerfnet
Pacific Continental/U.S. Invest	www.usinvest.com	$29.50	Momentum Campaigns
Professional Discount Securities	www.prodiscount.com	$25.00	Currents (Exodus)
ProTrade Securities	www.protrade.com	$ 5.00	Pacific Bell
Quick & Reilly	www.quick-reilly.com	$14.95	Moneynet (UUNET)
Scottrade	www.scottrade.com	$ 9.00	Netcom
Scottsdale Securities	www.discountbroker.com	$ 9.00	Home Com
Stocks 4 Less	www.stocks4less.com	$10.00	UUNET
Tradewell	www.trade-well.com	$22.00	MCNY (GTE)
Wall Street Access	www.wsaccess.com	$25.00	IDT
Wallstreet Electronica	www.wallstreete.com	$19.95	UUNET
Waterhouse Securities	www.waterhouse.com	$12.00	UUNET
Wyse Securities	www.wyse-sec.com	$ 7.95	Moneynet (UUNET)

THERE ARE ENOUGH COMPLEXITIES IN LIFE. CONNECTING TO THE INTERNET SHOULDN'T BE ONE OF THEM.

Creating an Internet presence can be a frustrating experience, even for the expert. Beyond the web server there are routers to make the connections, FTP to move the files, and e-mail servers to give your mail a home. And don't forget the Domain Name Server that's required so the world can know your name. Even after you gather all the pieces, you still have to integrate them. And the costs, in time and money, can be staggering. But now there is an easier way.

THE INTERNET PRESENCE IN A BOX

The Internet Protocol Adapter (IPAD) is the only product that fully integrates a router, terminal server, and core Internet services (e-mail, DNS, unlimited WWW and FTP servers) into a single device. With all the necessary internal and external connections, Domain Name Service, and other required functions, the IPAD includes everything you need to easily establish a complete Internet presence. In fact, it's so complete, you can add remote access by simply plugging in modems and dialing in with any Internet compatible computer.

BUILT WITH PERFORMANCE AND DURABILITY IN MIND

The IPAD's capability is housed in a rack-mount chassis of battle-ready construction. Its custom software, optimized for the Pentium processor, yields an unprecedented combination of performance and durability that you can never get from a general purpose operating system. The IPAD may be easy to use, but it's no toy.

	IPAD	Windows NT
Computer Hardware for Server CPU	Comparable performance 746	166 Mhz Pentium, 2 GIG SCSI Disk, Ethernet, Caching Controller 96 MB RAM, $3500
Router Software Configuration Time Configuration Cost Sub Total	Included Pre-configured – –	$1800 1-3 hrs $70 Avg $1870
System Software O/S Configuration Time Configuration Cost Sub Total	Included Pre-configured – –	$895 5-30 hrs $615 Avg $1510
Web Server Configuration Time Configuration Cost Sub Total	Included Pre-configured – –	Included 3-25 hrs $490 Avg $490
FTP Server Configuration Time Configuration Cost Sub Total	Included Pre-configured – –	Included 1-2 hrs $50 Avg $50
DNS Server Configuration Time Configuration Cost Sub Total	Included Pre-configured – –	$495 5-80 hrs $1600 Avg $2095
E-Mail Server Configuration Time Configuration Cost Sub Total	Included Pre-configured – –	$580 10-100 hrs $1900 Avg $2480
Support Costs Per Year	$795 Includes Hardware and Software Protection	$2100 No Hardware or Software Protection
Number of Vendors	1	5
Total Cost	$8260	$13600
Time from receipt to fully operational site	2 Days	120 Days

PLUG 'N PLAY AND WALK AWAY

Many products claim to be easy to use, but the proof is in the time you spend getting it up and running. With other products you have to *learn everything* before you can *do anything*, and with the Internet there's a lot to learn. Only the IPAD allows you to get started immediately, and learn as you go. Information Week said of the IPAD "*from box to working system in two hours even with mistakes.*"

And this ease of use doesn't stop there. With an IPAD even those without formal Internet training can confidently grow and maintain their own network.

GO WITH A WINNER!

InfoWorld Magazine said *"The IPAD represents an elegant solution when you need to easily build an Internet or intranet presence. Considering the time it saves you, the price represents a good value."* In 1995 John C. Dvorak gave the IPAD his PC Telecommunications Excellence Award because he recognized the IPAD advantage.

DON'T WASTE ANY MORE OF YOUR TIME!

You want your Internet Presence up and running quickly without a long learning curve or sacrificing flexibility and power. Now you can have it! The IPAD is the *only* TCP/IP appliance that lets you *start immediately* and grow your site smoothly without forcing you to become an Internet expert (or hire one).

TAKE CONTROL!

Call 303-699-6565 today and join those who have learned the secret to controlling their network rather than having their network control them.

If it's easy, it's eSoft

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like half a day, strong demand causes prices to rise. By Wednesday, there was little incentive to get in.

AND THEY'RE OFF

The trick was not to get the stock you wanted, but to get a hold of your broker. This was perhaps the first true test of online commerce. How far could the system be pushed?

Anticipating a busy Monday, engineers at E*Trade worked throughout the weekend to increase capacity. The company keeps all of its technical information a secret, so increasing capacity could mean adding an extra 56K line on top of its T-3. If you ask E*Trade customers who were shut out that day, you would think that's what they did. Larry Rosenthal, an online trader from the Silicon Valley who has accounts with E*Trade and eSchwab said, "If I had placed the trades I wanted, I could have made a huge sum today, but alas they suck and I'm poor."

According to a company spokeswoman, E*Trade did not have a capacity problem, just an access problem. E*Trade set in-house records on Tuesday for its number of simultaneous users. Throughout Monday and Tuesday of that week, E*Trade executed over 100,000 trades, 15,000 of which took place in the first fifteen minutes of Tuesday's trading. The 1996 daily average for transactions at E*Trade was slightly less than 15,000. The company's home page, which gives sign-up information but is not the trading forum, received 7 million hits on Monday and 9 million hits on Tuesday, after averaging 4 million daily inquiries in August.

Although 100,000 trades were executed, there seemed to have been many more individuals who simply couldn't get in. E*Trade has a policy that if a customer believes a trade did not go through, it will make good on the deal. That is, if you attempted to buy a stock at 10:30 a.m. for **$50** and it jumped to **$60** the following hour, E*Trade can tell if you were in its trading forum during that time and it will honor the price at 10:30 a.m. Likewise, if you needed to call E*Trade to make your deal, as many tried to do but were shut out by busy signals, the transaction would have been stamped at the time you placed the call, not when you finally spoke with a broker.

The behavior during the fire sale was also different from other days. Normally, individuals hit and run. They get in, make their trades, and then leave. Since the market was so volatile those days, most investors stayed in the trading forums for long periods of time. Not only could they make transactions as their stocks were going up and down, they also may have realized that if they left the forum, they might not be able to get back in. This type of behavior is becoming known as the AOL Syndrome.

This also happened at the eSchwab web site. Users logged in and stayed all day, shutting out thousands who sat in the queues. According to a Schwab engineer, many users would press the "Log In" button and, when they weren't moved to the transaction area, pushed it again. This only put them to the end of the queue. Schwab served a record 235,000 trades that day, up from its average of 100,000.

BRIGHT SPOTS

Schwab and E*Trade are very popular sites that did not perform well in their big day. A less known company, Datek, was one of the few that did not close its doors. The company added three new Netscape Enterprise servers to its T-3 connections to accommodate the early week rush. One Datek customer, Jeff Turbitt, said, "While the network was a bit slow during the morning frenzy, it wasn't impossible, and certainly better than trying to get a broker on the phone."

BRIGHTER DAYS?

E*Trade customers were not entirely surprised by the company's performance. One trader said that he received an "authorization failed" message when he tried to log in on Monday and Tuesday. He has also noticed that this has happened in the past during heavy stock market volume.

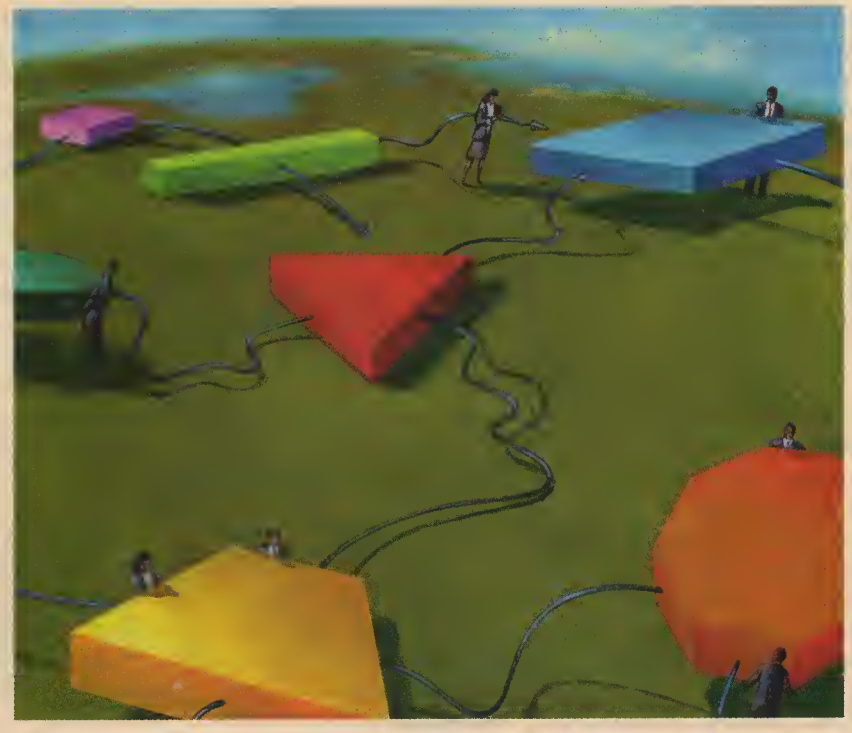
If high-tech industries are going to continue to live off of their Wall Street value, then it's only logical that high-tech should accommodate the stock markets. Those who live by the sword...◆

ISP$ MARKET REPORT INDEX

Symbol	Exchange	Company	Price 9/10/97	Price 10/7/97	Price 11/4/97	Percent Change	Shares (millions)	Market Capitalization
ATHM	NASD	@HOME	$19.14	$28.00	$24.13	-13.84%	117.52	$3,290.59
AOL	NYSE	America Online Inc.	$76.31	$79.63	$78.81	-1.02%	95.86	$7,632.69
CSRV	NASD	CompuServe Corp.	$13.94	$13.44	$12.81	-4.67%	92.60	$1,244.54
CNCX	NASD	Concentric Network Corp.	$14.63	$12.75	$11.00	-13.73%	13.51	$ 172.19
ELNK	NASD	EarthLink Network, Inc.	$15.50	$17.25	$17.18	-0.39%	9.68	$ 166.91
IDTC	NASD	IDT Corporation	$15.50	$17.94	$17.50	-2.45%	9.89	$ 177.43
WWW	TSE	iSTAR internet inc.	$ 1.20	$ 1.13	$ 0.93	-17.85%	24.43	$ 27.60
MCOM	OTC	Metricom Inc.	$ 5.50	$12.88	$13.50	4.85%	13.61	$ 175.19
MSPG	NASD	MindSpring Enterprises, Inc.	$17.13	$23.38	$28.00	19.79%	7.48	$ 174.77
NETC	NASD	Netcom	$13.06	$13.75	$19.63	42.73%	11.68	$ 160.64
OZEMY	NASD	OzEmail Ltd.	$15.75	$13.50	$13.13	-2.78%	10.20	$ 137.70
PSIX	NASD	PSINet Inc.	$ 8.69	$ 7.88	$ 8.13	3.17%	40.27	$ 317.16
RMII	NASD	Rocky Mountain Internet, Inc.	$ 2.13	$ 3.00	$ 2.75	-8.33%	4.65	$ 13.95
		I$P Report Index	**$16.81**	**$18.81**	**$19.04**			**$13,691.37**

Source: Stapleton & Associates

Expand your ISP business without having to build your own Internet network.



As a partner with **PSINet Wholesale Network Services**, your company can become a provider of leading Internet services with a single phone call. By leveraging our Tier 1 backbone network and our proven line of Internet solutions, you can easily add a high-profile, revenue-enhancing dimension to your business.

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Whatever your principal line of business, you *and* your customers will be glad when you turn our services and our network into new business opportunities for you.

Private-Label Services

Take a closer look at your business.

Is your consumer Internet service suffering because you don't have a network solution in place today? Are your corporate IT customers demanding Internet and Web access now?

Then call PSINet. Our **Wholesale Network Services** provide you with everything you need to serve consumer and business customers alike.

Our programs include:

- Access to **hundreds of POPs** throughout the U.S. and internationally
- Around-the-clock **network management** from our own network operations center
- **Reliable performance** via ISDN connections, high-speed analog modems, and point-to-point frame relay circuits
- Extended second-level **customer support and management support for consumer ISPs**
- The **full range of services and support for business customers**, including pre-configured CPE, domain name and IP address allocation

For more information, call

1-800-341-6186
www.psi.net/bw/wh2

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POLICY FORUM

Rudolph Geist

ISPs AS REGULATED TELECOMMUNICATIONS CARRIERS?

The Telecommunications Act of 1996 was passed under the premise of creating a pro-competitive, deregulatory framework under which the telecommunications industry could move forward into the 21st Century. The Act was intended to help tear down monopoly barriers, while reducing the amount of burdensome regulation to which telecommunications carriers have historically been subject. However, recent events have caused some governmental leaders to question whether the intent of the Telecommunications Act will inevitably reign. Specifically, there has been a push by some inside the Capitol Beltway that will inevitably lead to increased regulation of ISPs.

A recent legislative proposal made by United States Senator Ted Stevens that would classify ISPs as telecommunications carriers under the Telecommunications Act of 1996 could have severe consequences for ISPs. Senator Stevens' proposal is specifically intended to preempt the Federal Communications commission's (FCC) decision to exempt ISPs from the requirement that all telecommunications carriers make contributions into the Universal Service Fund (USF), which includes the federal government's new **$2.25 billion** per year subsidy program for providing schools and libraries with advanced Internet and other telecommunications services (see July '97 Policy Forum for details on the USF). But if the Telecommunications Act is amended as Stevens proposes, ISPs could be subjected to a whole new can of worms, FCC regulation of Internet services, and possibly state regulation of those services as well.

Where an ISP acts as a telecommunications carrier and provides regulated telecommunications services, it should be treated by the FCC or the states the same as any other regulated carrier providing the same regulated services. For example, it makes sense for an ISP to create a wholly owned subsidiary which obtains state and/or federal certification as a competitive local exchange carrier (CLEC) (and is regulated as such), for among other reasons, the purpose of acquiring local telecommunications services at federally mandated discounts from the local telephone company for resale to its parent ISP corporation (see November '97 Policy Forum for details creating a CLEC). The existing regulatory framework is consistent in this case as the ISP's regulated CLEC subsidiary is simply acting as would any other regulated CLEC in reselling regulated local telecommunications services to the ISP.

However, it makes no sense for Congress or the FCC to alter the existing regulatory framework and broadly define ISPs as telecommunications carriers, potentially subjecting all ISPs to regulation with respect to the provision of currently unregulated Internet services. The regulated services ISPs purchase from telecommunications carriers, such as dial-up lines and local loops, are used by ISPs in the delivery of Internet services to their end-user customers and have historically been regulated. The regulation of these services began as a result of their monopoly provision and has largely been justified for the same reasons. The provision of unregulated Internet services, however, is extremely competitive, with typically two to three competing ISPs, even in rural markets, and a continually increasing number of over 4,500 ISPs in the United States. The current Internet service provider industry epitomizes what is meant by free flowing market forces, and has developed in this manner because of the low barriers to entry and lack of burdensome regulations. There is simply no viable justification for FCC or state regulation of Internet services which would only stifle these explosive market forces.

The FCC currently regulates interstate telecommunications services and numerous intrastate services interconnected with the interstate telecommunications network. The Commission oversees carrier certification and build-out, system expansion, licensing, billing practices, pricing, service provision, as well as numerous other aspects of the telecommunications business. The FCC also requires that telecommunications carriers pay annual regulatory fees, contributions into the Telecommunications Relay Services Fund (TRS), and contributions into the USF.

If ISPs are classified as telecommunications carriers under the Telecommunications Act, in all likelihood they will be subject to pay regulatory fees and make contributions into the TRS and USF funds based on revenues from their Internet services. Having to make contributions could have very detrimental consequences for many cash-starved ISPs. Further, and more of a threat, is the possibility that the FCC will get involved in other aspects of regulating the business of ISPs. For example, ISPs are currently exempt from paying access charges (i.e., payments to the local telephone company for access to the local telecommu-

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nications network), which are payments that long-distance and other interstate telecommunications carriers are required to make. These payments could equal as much as 5¢ per minute of use per line.

Instead of being classified as interstate telecommunications carriers for purposes of access to the local telecommunications network, ISPs are defined as enhanced service providers under the FCC's rules. Enhanced service providers are further classified as end-users (like regular business customers) for purposes of the purchase of intrastate services, i.e., the local dial-up lines which ISPs purchase to connect customers to their modem banks. If the FCC did not classify enhanced service providers, including ISPs, as end users, the alternative would have been to classify them as interstate telecommunications carriers, likely leading to the payment of access charges.

As most ISPs are aware, the payment of access charges means substantially higher per line costs, which in turn could lead to either sharp price increases or significantly lower revenues. Many ISPs could not continue to compete if forced to raise prices or accept reduced revenues, and as a result might be ultimately forced out of business. The fact is that the FCC, under the authority of Congress, might be forced to take such action requiring ISPs to pay access charges, which could greatly harm the overall viability of the ISP industry.

Further, if ISPs are considered telecommunications carriers under the federal Telecommunications Act, many states would likely follow the federal model and define ISPs as telecommunications carriers for purposes of state regulation of Internet services. States are charged with regulating intrastate telecommunications services and rates, and certifying telecommunications carriers to provide services within their respective states.

If ISPs are considered telecommunications carriers with respect to intrastate services, then in order to compete within a state, an ISP might be forced to first obtain a certificate of public convenience and necessity from the state public utility commission (PUC), corporation commission, or public service commission (PSC) before it would be permitted to offer Internet services in that state. Further, the ISP might be forced to file tariffs for its Internet service offerings. Tariffs are schedules of service offerings and charges required to be on public file with the regulating body which usually lock a telecommunications carrier into offering specific prices for particular services. Tariffs are intended to ensure against carriers discriminating between customers with respect to the provision of the same services. The requirement to file tariffs for Internet services could substantially limit an ISP's pricing flexibility. Finally, a state regulated ISP might also be required to request permission from the state before it could expand its reach to serve new areas or provide new services within the state. All of these burdensome regulatory requirements could cost ISPs time and money.

While all this might seem inconceivable as resulting simply from Congress defining ISPs as telecommunications carriers, it is not far-fetched. This is the world of regulation of the telecommunications industry. ISPs have become emerged in a regulated telecommunications industry that has historically consisted of telephone companies, cable companies, broadcasters, satellite providers, and limited other telecommunications entities. But now it is a converging industry in which the lines that once separated industry participants are disappearing, and new services are emerging. This is especially true with respect to ISPs, who provide a broad range of telecommunications transmission capabilities and content to the general public.

As Internet services become more important and ISPs become larger players in the telecommunications industry, the trend toward regulating ISPs and Internet services will become even more substantial. Therefore, it is critical that ISPs not ignore what happens in Washington, DC, or at their state legislatures and state regulating bodies. ISPs need to ensure that their separate treatment and unregulated status remains intact.

ISPs can start to contribute to the preservation of their current unregulated status by joining a trade association that represents the ISP industry on these issues. While many ISPs cannot justify hiring an individual attorney or lobbyist to represent their interests on these issues, trade associations can be valuable representatives in significant proceedings and provide other substantial benefits. Further, and to the extent possible, ISPs should become active in their individual capacity with respect to important issues before their state legislatures and public utility regulating bodies, and with respect to issues before the U.S. Congress and at the FCC. ISPs simply need to begin making a grassroots effort to ensure the future viability of their industry.

There is no longer time for ISPs to take a back seat with respect to the critical issue of avoiding burdensome federal and state regulation of Internet services. For ISPs to begin paying attention to and acting on these issues is vital in order to preserve the continuing viability of the ISP industry into the 21st Century. ◆

BIG BOARD BRIEFS by Wallace Wang

AMERICA ONLINE HITS 9 MILLION MEMBERS

Like a cancer growth that can't be stopped, America Online's membership keeps swelling despite its technical difficulties. *The Electronic Information Report's* quarterly online subscriber survey recently found that online subscriptions went up by 12.9 percent in the second quarter of 1997 to 24.7 million. America Online led all online services with a total subscriber base of 9 million users.

The study covers online services and not subscribers who connect to the World Wide Web through Internet service providers. AOL, CompuServe, Prodigy, and Microsoft Network are the primary online service providers, but the study includes 53 different online services, most of which concentrate on specific features.

According the study, CompuServe grew 1.6 percent to 5.4 million subscribers, from 5.3 million at Dec. 31, 1996 and Microsoft Network's subscriber base rose 35.3 percent to 2.3 million from 1.7 million at the end of last year. As a whole, the consumer category grew 11.9 percent in the second quarter to 20 million, from 17.9 million.

The German service of America Online even doubled its membership to more than 400,000 users. "The online market is growing rapidly and AOL is growing faster than the market," newly-appointed managing director Andreas von Blottnitz says. AOL forecasts that the German online market will grow 60 percent in the next 12 months, which means soon German users may soon be able to experience unlimited busy signals just like their American counterparts.

JUSTICE DEPARTMENT REVIEWING AMERICA ONLINE/COMPUSERVE DEAL

Antitrust regulators are reviewing the acquisition and break-up of CompuServe to make sure America Online isn't breaking any anti trust laws (as if that's ever slowed Microsoft's growth).

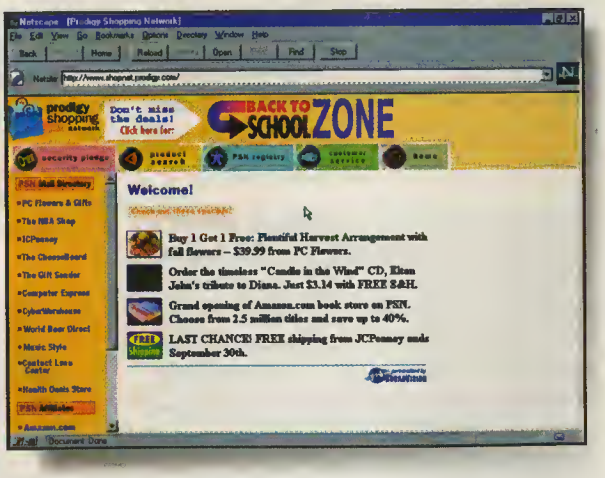
"It's going to be very hard to prove that with 4,000 Internet access providers out there, there is any antitrust problem," said online analyst Gary Arlen, president of Arlen Communications.

The government's review will focus on America Online's ability after the merger to raise prices unfairly without being held in check by existing competitors or new entrants, said William Baxter, former head of the Justice Department's antitrust division. America Online expects an antitrust review would only delay the deal for four to six months. "We are confident this deal will pass muster in terms of regulators in both the United States and around the world," said AOL chairman Steve Case.

Considering the fact that the Justice Department had no clue how to handle the Microsoft Network's introduction, nor Microsoft's stranglehold on the operating system market, don't expect more than a rubber stamp approval.

AMAZON.COM JOINS THE PRODIGY SHOPPING NETWORK

In its continuing effort to grab more content providers, Prodigy announced an agreement naming `Amazon.com` the exclusive bookseller on the Prodigy Shopping Network. Under the agreement, Prodigy Shopping Network (`www.shopnet.prodigy.com`) will offer Internet users a direct gateway to the web site of online bookseller Amazon.com (`www.amazon.com`).



The Prodigy Shopping Network search engine shops across a database of more than 20,000 items and enjoys a large and loyal user base (at least according to Prodigy's marketing department). In the future, users will find `Amazon.com` to be prominent in the Prodigy Shopping Network Mall with direct links to Amazon.com content from relevant areas inside the Prodigy Internet service.

Additional merchandisers on the Prodigy Shopping Network include JC Penney, PC Flowers & Gifts, The Cheeseboard, Computer Express, The Gift Sender, The NBA Shop, World Beer and Cigar Direct, Music

Wallace Wang is the author of ***CompuServe For Dummies, Visual Basic For Dummies, More Visual Basic For Dummies, Microsoft Office 97 For Dummies, and More Microsoft Office 97 For Dummies.***

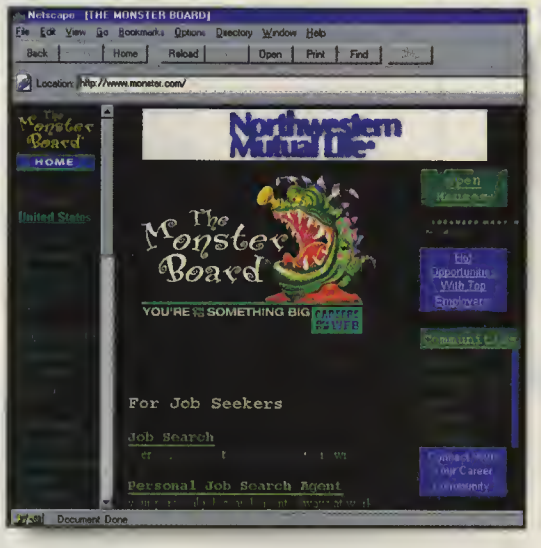
When not working with computers, he performs stand-up comedy and has appeared on A&E's *Evening at the Improv* TV comedy show. He can be reached via e-mail at `70334.3672@compuserve.com`, `bothekat@aol.com`, `bo_the_cat@msn.com`, or `bothecat@prodigy.net`

Style, Health Oasis, and a whole host of other retailers that most people probably don't care about.

The agreement is the latest in Amazon.com's continuing battle against Barnes & Noble for the online market. Amazon.com also recently established premier bookseller agreements with America Online, Excite, and Yahoo. With so many books for sale available online, will people start reading more or just spending more time in front of their computers?

"MONSTER BOARD" RECRUITMENT SITE GOING TO AOL

To further cement its position in the online market, America Online recently announced that it will post The Monster Board (`www.monster.com`), long-time hiring force in the technology business, onto America Online.



The Monster Board is run by recruitment advertising company TMP World-wide. Under the agreement, TMP's Internet sites, The Monster Board and Online Career Center will have premium advertising positioning in AOL's Employment Classifieds Area. In addition, The Monster Board and Online Career Center ads also will be positioned in three other AOL sites in the Employment Classifieds: Employers Offering Jobs, Members Seeking Jobs, and Employment Services.

So now if you want to look for a job, look first on America Online. Perhaps you can start answering all those ads for technical support engineers that America Online constantly needs to keep its networks from crashing completely.

AMERICA ONLINE ENTERS THE MUSIC DISTRIBUTION BUSINESS

The Hub, an AOL music site, will begin offering digital downloads of music, bypassing both real-world and electronic CD outlets. "When you get companies like AOL involved, it raises the visibility of the whole concept," said Larry Rosen, CEO of N2K, another music site offering digital downloads. "Consumers see AOL as a more protected environment. They feel more comfortable purchasing products in that area. Once people start buying online," Rosen observed, "it's a very compelling thing."

In AOL's case, the Hub is teaming up with software-maker Liquid Audio for encrypted downloads of new singles. Each single is expected to cost about 99 cents, and would take roughly 12 minutes to download with a 28.8 Kbps modem. The Hub already boasts some 50 million page views a month, and hopes to boost traffic when it expands on the Web as well.

"Everyone realizes the music space is a profitable one, and we're staking out our presence," said Peyton Kay, the Hub's director of sales and marketing. The online music market is now estimated at about $47 million and is expected to grow to about $500 million over the next couple of years.

Kay admitted that digital downloads may still be ahead of their time. While some people will want to download tunes straight to their PC hard drives, the real potential lies in recordable CD units, which are still something of a rarity among consumers (although CD pirates in Asia have known about them for years).

Eventually — and especially as cable modems allow for high-speed access through a new generation of smart TVs — digital downloads are seen as a sort of Net-based jukebox.

"We all sat around and made party tapes in college," Kay said. "We're going to allow people to make party tapes via the Internet."

First, though, the major record labels have to overcome their intense fear of piracy. The Hub and other sites will offer a new Duran Duran single from Capitol Records, but the participation of a major label is still more the exception than the rule.

Microcom® ISPorte™

The New Standard for Reliable Modem Connectivity

"The Microcom ISPorte is the easiest rackmount modem that we have ever used. It is completely Plug-n-Play."
- Irve Towers, The HUB Internet Services

"The ISPorte is a truly Plug-n-Play solution. The quad modem cards came ready to use with no modem command strings to worry about."
- Eric Padua, KLINK.NET Communications

"The ISPorte was a breeze to work with. I especially appreciate the *porte*WATCH software, which has made configuring new modems quick and easy."
- Beth Morgan, Internet of the Sandhills

"I have been using the ISPorte for six months now with no problems. Speed and reliability are excellent and the setup was brainless. I would recommend the ISPorte to all RAS services. I love my Rack!"
- Bill Fernandez, Chelmsford On-Line Services

"We found the modems easy to manage using *porte*WATCH software."
- Frank Smith, Stix Communications

"Installing the ISPorte eliminated ALL of our tech support due to flaky consumer grade modems that we had been using."
- Barry Zett, 1USA.COM

"The Microcom rack modems were the easiest install ever. Everything went smooth and our membership loves the speed."
- Howard Frisvold, Endless Mountain Cyberspace

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Despite advances in encryption, he continued, record companies know that the technology is not yet foolproof, and that once downloads are possible, widespread piracy via the Net is almost inevitable. In any case, it will be quite some time before digital downloads — or online CD sales, for that matter — pose a significant threat to traditional retailers. However, digital downloads will likely pose a significant threat to pirates once everyone can record their own CDs.

AOL TO PROMOTE MICROSOFT'S *SLATE MAGAZINE*

Microsoft's high-profile (and low subscriber base) online magazine *Slate* will try to win more readers under a new agreement with America Online. Under the one-year deal, *Slate*, edited by Michael Kinsley, will become an "anchor tenant" of America Online's revamped News Channel Newsstand. Anchor tenants, including *Slate*, will have a continuous presence as icons on the main Newsstand menu, an AOL spokeswoman said. The Newsstand page also will feature content from America Online partners including *The New York Times*.

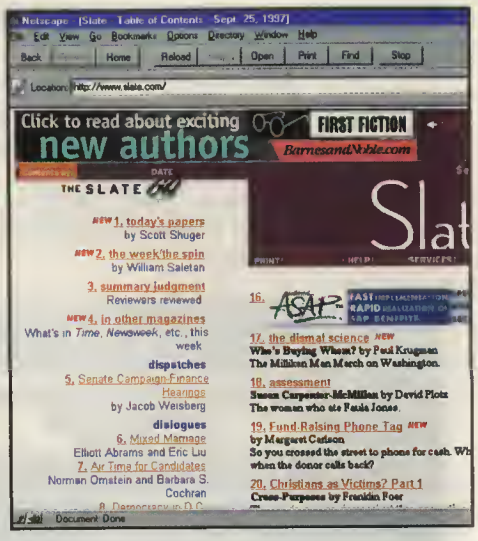
Slate will pay an undisclosed fee to America Online, which in turn will guarantee a minimum number of viewer impressions over the term of the contract, said Microsoft marketing manager Paige Prill. "This was a great opportunity for distribution for us," she said. "It was a good business decision to expand our reach." Considering that nobody is really reading *Slate*, any addition exposure has got to be welcome news.

Slate, an online journal of politics and culture launched in June 1996, bears some similarities to *The New Republic*, a magazine formerly edited by Kinsley, who became well-known in journalism during a six-year run on the nightly CNN television show "Crossfire."

While the web-based magazine has been well received critically, Microsoft has not generated enough interest yet to follow through with announced plans to charge $19.95 for an annual subscription, although Prill said *Slate* still plans to begin charging readers at some point in the future.

Microsoft also canceled early efforts to distribute a printed version of the magazine at newsstands and cafes, although readers can order a print version by mail for $70 a year. In case you don't want to access *Slate* through America Online, you can still find the magazine on the Microsoft Network or by direct Internet connection (`www.slate.com`).

CNET TO LAUNCH SNAP! ONLINE SERVICE



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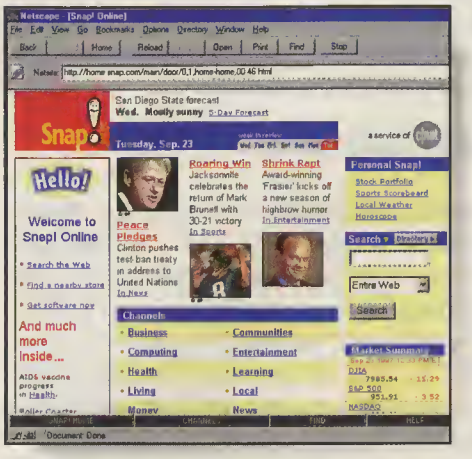
CNET TO LAUNCH SNAP! ONLINE SERVICE

If you're a struggling ISP and want to become just like America Online, you have two choices. One, you can stop adding additional modems, reduce or eliminate your technical support staff, and start censoring everything your members try to do. Or two, you could offer CNET's free Snap! Online service (`http://home.snap.com`).



The idea behind Snap! Online is to provide ISPs with content that can compete with AOL. CNET hopes to profit from Snap! Online by selling online ads. When CNET first announced Snap! Online in June, it also announced the major Internet service providers as partners, including AT&T Co.'s WorldNet, BellSouth Net, EarthLink Network, MCI Internet, and MindSpring.

Snap! Online will build a customized, co-branded online service for each of its distribution partners. Snap!'s partners will market their respective services to their customers, via web site promotion and broad distribution of co-branded Snap! Online CD-ROM starter kits.

CNET said its new distribution partners include First Chicago NBD Corp., Hilton Worldwide, 3Com Corp., Universal Studios Online, and Virtual Emporium. It also has distribution pacts with Bell Atlantic, WholeEarth Networks and others.

Snap! Online will be organized into 13 channels, News, Sports, Entertainment, Travel, Business, Living, Money, Health, Computing, Learning, Local, Communities and Shopping.

The new product is a move by the computer news and television production company to extend beyond its high-tech focus. Snap will have a staff of more than 40 producers to comb the Internet to determine the top stories in each channel and where on the Web to find the best coverage.

COMPUSERVE TESTING E-MAIL FILTER

To fight against spam, CompuServe is testing a filter that allows members to restrict the flow of unsolicited, online e-mail. During its initial tests, CompuServe said the filter restricted more than 30 million unsolicited messages per week. CompuServe says the e-mail filter will automatically be turned "on" unless members decide to turn it off. ◆

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"When we began the search for a modem pool product, we evaluated solutions from several vendors. We determined that the ISPorte was superior because of its expandability and reliability."
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"Reliability, modem density, innovative monitoring, expansion options, and customer approval make the Microcom ISPorte a winning solution."
- Morgan Davis, CTS Network Services

"Coupled with the Livingston Portmaster 2e, the ISPorte provides an easily expandable system for establishing new POPs at the lowest price/port available."
- Mark A. Fry, BlastNet Internet Service

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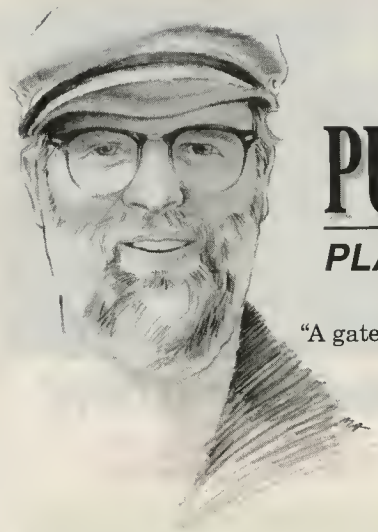


PUTTING THE NET TO WORK

by Durant Imboden

PLANET DIRECT

"A gateway to the Internet."

"An on ramp to the Web."

"A front end to the Net."

Those catch-phrases are bandied about constantly these days, to the point where the aggregators have become aggravating. Just about everybody in the online business—from search engines to startups—wants to take the newbie user by the hand and say, "Make our home page your 'start' page." And to make sure that Net novices can find them in the first place, the newer aggregators are striking distribution deals with Internet service providers that range from big-name telephone companies to Garage & Basement, Inc.

Enter Planet Direct, a "next generation online service" based in Andover, Massachusetts. At first glance, Planet Direct's web site looks much like Snap! Online, My Excite, My Yahoo, and other new services. But there *are* subtle differences among these integrators and packagers of web content, and Planet Direct has some unique twists that could make it tempting to ISPs.

NANNIES FOR NEWBIES

"While Cyberspace may seem like a cool, faraway place to many current users, it can be intimidating for others," says a Planet Direct brochure. "Planet Direct is an Internet service which aggregates and harnesses the best of the Web—access, navigation, search and content—and allows users easy access from a familiar, local perspective."

Nothing new here. Like other web start pages, a user's Planet Direct page can be customized to display news headlines, local weather forecasts, sports, a search window, and links to content in various categories or channels. An unadventurous user could spend his or her Internet life under the Planet Direct roof (i.e., the persistent banner), subsisting on content supplied by third-party sources like The Auto Channel, Bookwire, Epicurious Travel, The Mining Company, MovieLink, ParentSoup, PC Quote, the Weather Channel, and ZDNet.

Do consumers want this kind of hand-holding and content packaging? America Online's success makes it fairly clear that they do, and Planet Direct is merely one of many companies that hope to emulate a little of AOL's success on the open Web.

THEY MAKE IT, WE MIX IT

Hans Hawrysz, president and CEO of Planet Direct, is quick to point out that, unlike some other Internet startups, Planet Direct isn't in the business of creating original material for the Web. He uses The Mining Company as a case in point. "If I look at The Mining Company, I see them providing deep narrow content, which is something that people need. In other words, I regard them as a content source, and they regard us as a means of distribution."

He feels that Snap! Online is more of a direct competitor, although he sees differences between the two services. "I think they have a news heritage and will be more news-oriented, while we'll be more community-oriented and focused on the ISP channel."

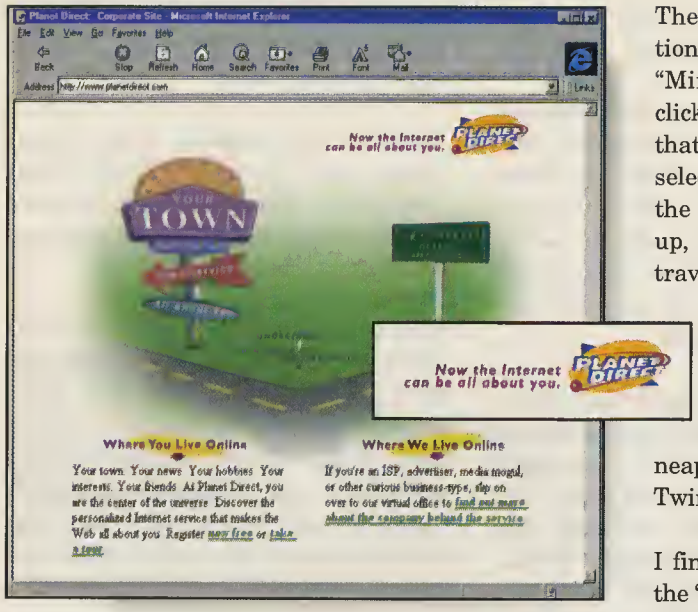
Hawrysz is philosophical about competition from the search engines, which have begun emphasizing aggregated content and communities. "If you look at how all of us measure our success, it's the amount of time we can get consumers to spend in our services. Search engines traditionally have a lot of consumers, but very little time. They need to increase their time, which means broadening their service and providing consumers with a one-stop, easy web experience."

Hawrysz feels that there's room for all (or at least some) of these businesses to find niches in a huge and fast-growing marketplace. "The consumer market is the largest web market that's out there," he says. "We'll see people try to differentiate themselves by focusing on different areas, for example. At some level, everybody's becoming a content packager."

A LOCAL FOCAL POINT

There's nothing revolutionary about local content on a personalized opening page, but Planet Direct takes

Durant Imboden is a freelance writer whose credentials include published novels and nonfiction, fiction editing and staff writing for ***Playboy***, travel writing for corporate clients, and representing authors at a New York literary agency. He currently manages the Writing Forum on The Microsoft Network and co-authors the "Flame Wars" column on Delphi, where he is an editorial consultant. Durant maintains a web site for writers at **http://www.writing.org. MailTo: imboden@writing.org**



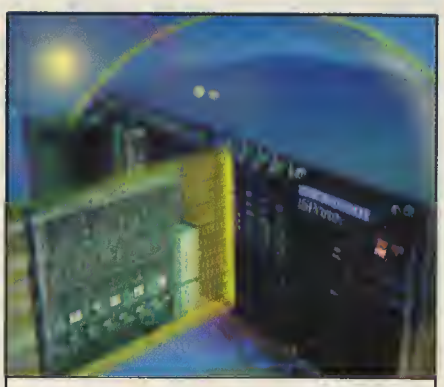
the "localization" idea farther than most megasites and online services.

Example: I live in Minneapolis, Minnesota. When I open the Planet Direct home page at `www.planetdirect.com`, I see a large sign that says "Entering Your Town." I click the graphic, which takes me to a personalized page with a "Minneapolis" link at the top of the screen and a local weather report in the left-hand navbar. But that's not all.

The right-hand navigation buttons are labeled "Minneapolis topics." I click "Travel" and go to that category's page, then select "Destinations." Of the four links that come up, three are from local travel resources (including Pioneer Planet, which is sponsored by the St. Paul Pioneer Press across the river from Minneapolis, and Microsoft's Twin Cities Sidewalk).

I find more local links in the "On the Town" section under "Restaurants," "Backstage," "Sports," and other topics. Granted, there are plenty of menus that don't include links to Minneapolis-St. Paul content, but the editors at Planet Direct have obviously worked hard to dig up local sites that I might not have found on my own.

"We think localization is a real differentiator for us," says Hans Hawrysz. "We realize we're never going to be as local in a specific location as `Boston.com`, but we'll be more local than any other national service. We've



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"The ISPorte has been a simply outstanding product. It worked right out of the box with no initialization or setup strings and we've had zero customers with connect problems."
- Ger Throng, Accelenet Communications

"All of our customers are consistently getting 28.8 or better connections."
- Paul Gilpatrick, HostWorks

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also added a feature called 'Switch cities' that lets you switch, for example, from Boston to Jacksonville or Philadelphia. This reflects the fact that many Americans move continuously, have roots in multiple cities, or travel. The concept fits very well with our local ISP partnerships, and we think it can be extended on a global scale."

Unlike Hans Hawrysz, I'm not sure that consumers are hungry for local sites on the Web. They may be on the web because they want to expand their horizons beyond Pittsburgh or Podunk. Still, if local content *is* what users want, they'll find it in spades on Planet Direct.

COMMUNITY BEGINS ON THE WEB

Although Planet Direct emphasizes real communities, it doesn't neglect the online version. The service includes chats and bulletin boards, with the latter consisting of newsgroups rather than the increasingly popular "in-frame" web boards (presumably in the interest of faster loading and posting for users with 14.4 or 28.8 Kbps modems).

"Our sysops are community leaders," says Hawrysz. "We're receiving more and more volunteers from our Planet Direct membership. There are people out there who really want to participate." (Note: Planet Direct sysops aren't paid, although they do earn rewards such as hats and prizes.)

Hawrysz adds: "We think that, at the end of the day, member-created content will be very important. For example, we have an 'Opinions' area that's very popular in generating responses both on the boards and through e-mail. We've also included member content in our search capabilities, which will create a very valuable resource for our customers over time."

MORE TECHNOLOGY, FEWER BODIES

Compared to AOL or c/net's Snap! Online, Planet Direct is a low-budget operation. "Our staff is at about 55," says Hans Hawrysz. "That includes design, editorial, ISP sales, ad sales, and everything else."

To keep the company lean, Planet Direct and its parent firm, CMG Information Services, have invested heavily in the latest database-driven publishing technology.

"One of our business models is to use our technology to create an experience for customers at a fairly low cost," Hawrysz explains. "We don't need to have hundreds of editors sitting around—we can automate our system with bots and other tools that integrate our own pages and partner content into a seamless web experience."

A PLETHORA OF PARTNERS

"Right now, we have 70 or 80 active content partners," says Hawrysz. "And we have almost 30,000 links in the service. The Mining Company, ZDNet, and CitySearch are good examples of partners whose content we're integrating into Planet Direct."

ISPs: LOOKING FOR A REMOTE ACCESS SERVER THAT IS *FASTER, MORE RELIABLE, & LESS EXPENSIVE?*

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The PowerRack also has the standard feature list: dial-in/dial-out access, a powerful RISC CPU, Ethernet connectors, ISDN capability, PPP, SLIP, CSLIP, *bootp*, *rlogin*, *telnet*, reverse *telnet*, PAP/CHAP authentication, RADIUS II, RIP II, SNMP MIB II, subnet routing, IPCP DNS exts. for Windows 95, and IP filtering.

PowerRack user and Internet Service Provider Michael Behrens, of InterNet Kingston (mbehrens@kingston.net), commented, "The PowerRack is an attractive product, both in its ability to do the job well and to do the job. . . cost effectively. Port for port costs are significantly lower than the Livingston Portmaster. The product lives up to its name. . . performance under load is exceptional! The PowerRack also offers a significant feature for feature comparison against the available competition (i.e. Livingston Portmaster). And, technical support was extremely knowledgeable and responsive."

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AVENUES FOR REVENUES

Banner ads are the primary focus of Planet Direct's revenue model for now, but Hawrysz foresees a day when sponsors will assume greater importance to Planet Direct and the industry as a whole.

"Sponsorships have emerged fairly quickly," he says. "In looking at the numbers on Internet ad revenues in the last quarter of this year, we can see a 60/40 split between banners and sponsorships. Corporations are realizing that building a standalone corporate web site doesn't make sense, and that it's more productive to make deals with content aggregators—to get their name into a corner of a service rather than building a service themselves."

SO WHAT'S IN IT FOR THE ISP?

Planet Direct relies on Internet service providers for distribution. Unlike Snap!, it doesn't have any illusions about charging ISPs for its service. "I think Snap! found out pretty quickly that license fees weren't going to work," Hans Hawrysz says dryly. "I thought that was a pretty arrogant idea myself."

Deals between Planet Direct and ISPs are straightforward. "We basically share revenue," Hawrysz explains. "One other thing we provide is an advertising aggregation capability. We do all ad serving, ad management, and ad sales. This means that a small ISP can plug into a national advertising management system and sales force. And if an ISP wants to sell local advertising on Planet Direct pages, we can handle that, too."

To make a relationship with Planet Direct even more attractive, the company offers free marketing and technical services to ISP partners.

"We're pretty aggressive in doing market research," says Hawrysz, "so we can provide feedback to ISPs on what consumers like and don't like. We offer technical services like page-loading bots that measure the ISP's speed. In other words, we feed back data that can help the ISP compete."

When asked if he feels that Planet Direct is taking a big risk in depending on ISPs for distribution, Hawrysz points to what he's seen in the financial services industry. "In banking, logic tells you there ought to be three big players, but it doesn't work out that way. There are still tens of thousands of banks around the country, and they've survived by leveraging their local experience while plugging into economies of scale. ISPs can survive in the same way."

Planet Direct's current ISP partners range from BellSouth, Concentric, and IDT, down to small local businesses. "We have about 150 ISPs right now, with a total of 1.8 million users," Hawrysz says. "We're very committed to using ISPs as our primary means of distribution. In fact, if a customer of a Planet Direct affiliate comes in 'over the transom'—that is, from the open Web—we credit that customer's ad views to the ISP partner."

Hawrysz continues: "We're also working with ZDNet to develop web tutorials that ISPs can present to their customers. We plan to partner very aggressively with ISPs in finding, localizing, and personalizing content so they can stay competitive in a changing industry."◆

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"The ISPorte has more benefits for lower cost than any of the competing products in its class."
- Carl Shivers, Aristotle Internet

"Microcom ISPortes have proven inexpensive, reliable and easy to monitor."
- Laura Megill, Penncom Internet Company

"Bang for the buck, they're really great and I'm looking forward to upgrading to the digital interface."
- Paul Joncas, MEGANET Communications

" A truly cost effective solution with 56K upgradeability."
- Eric Padua, KLINK.NET Communications

"A truly high-end solution at the low end price."
- Mark A. Fry, BlastNet Internet Service

"We found nothing was nearly as cost-effective, reliable, or easy to use."
- Alan Clark, SouthTech Internet

"I was pleasantly surprised at the reasonable price."
- Irve Towers, The HUB Internet Services

"We know of no system which provides better price performance in this mission critical role."
- Larry Tolton, Internet Portal Services

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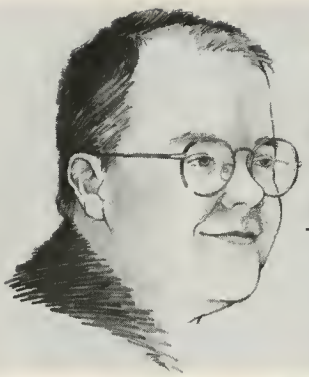


EURO NEWS

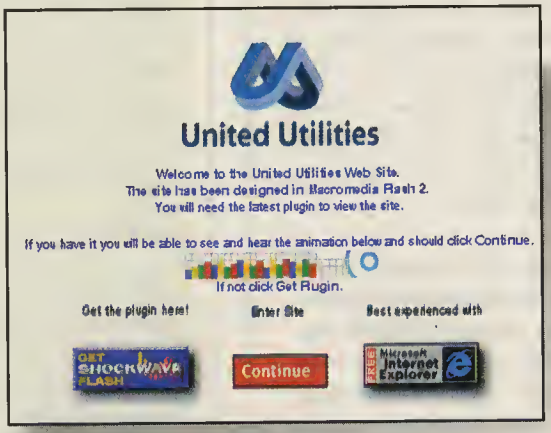
Richard Baguley

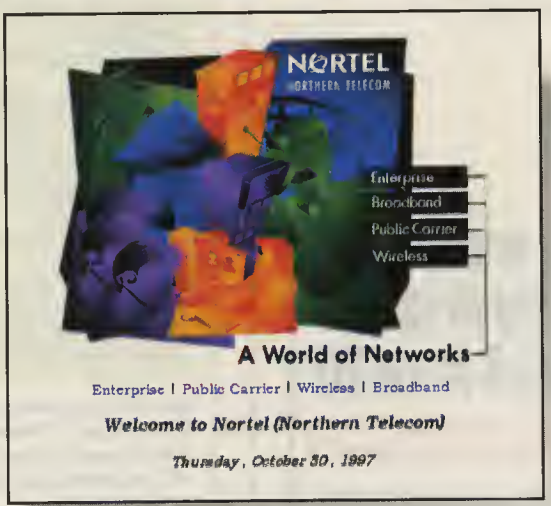
CUTTING OUT THE CABLE?

A U.K. utilities company is rolling out a new development which it claims "will open a new wave of Internet growth." United Utilities (www.unitedutilities.co.uk), which owns both electricity and water companies, has developed a new system in collaboration with Nortel (www.nortel.com) that will deliver Internet traffic over electricity cables, negating the need for any extra cabling for a company or home to get online.

Richard Baguley is the technical editor of ***Internet Magazine***, the UK's best selling Internet magazine (www.emap.com/internet). His writing has appeared in numerous places, such as ***Mac Format***, ***Wired News*** and ***WebMaster***. He is an ex-editor of ***Amiga Shopper*** and ***Internet Today***.

He lives in North London and was recently photographed wearing a dinner jacket and bow tie to the annual ***Internet Magazine*** awards. He is currently negotiating to buy the negatives in order to destroy the evidence. He can be contacted at baggers@baggers.com.





The system allows an electricity company (or another company with access to its cabling) to send and receive data at speeds of around 1 Mbps. The company can send and receive data over the same cable it uses to deliver electricity. The users simply tie in their computers with a special card, and they can browse the Internet without telephone lines or any extra installed cabling.

The clever bit is the way that the data is transmitted over what is (in electrical terms) a very noisy piece of copper — the link between the house and the electricity company. This uses a patented system to stop the interference caused by a neighbor turning on the washing machine.

However, ISPs shouldn't panic quite yet — the system does have certain limitations. It requires that a special piece of equipment be attached to the transformer that the electricity company uses to supply the customer. Each of these transformers supplies a number of buildings, and only buildings directly connected to this transformer can use the service. This makes the economics of this service less attractive than it appears — will companies want to invest in the equipment they require if only a small number of customers will take them up on the service? This also means that it's unlikely to take off in the United States, where a utility company transformer will only supply a handful of buildings. In Europe, one transformer can supply several hundred buildings or houses. The companies are primarily looking to market the system in Europe and Asia and are already claiming widespread interest.

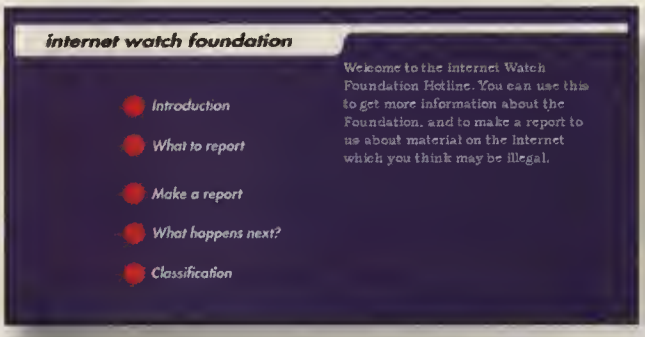
There is also the problem of speed. The speeds that the companies are claiming are in the region of 1 Mbps, while a cable modem system can (in theory, at least) deliver in the tens of megabits per second. While it seems churlish to mark something down for only delivering one megabit when most people are still only using modems that give 33.6 Kbps on a good day, it could be a limiting factor in how much it is taken up by corporate users. While a normal leased line can be expanded, with this new system, you would be limited to a speed that could preclude some operations like video conferencing. Also, the available bandwidth has to be shared with all the other users on the same transformer. Anybody requiring a guaranteed chunk of bandwidth for purposes such as hosting a web site should be cautious of using a system that could get clogged up. Just ask anybody that's tried to copy a file over an office LAN while other people are attempting to kill each other on a networked game of Doom.

Meanwhile, the modem companies aren't standing still. Rockwell has recently announced that it is working on a new technology that can deliver up to 1 Mbps of bandwidth over a normal phone line. The system, which some have dubbed *ADSL Lite*, uses the basic technology of ADSL (Asymmetric Digital Subscriber Line) but is much cheaper to implement. It gives a downstream (ISP to user) speed of up to 1 Mbps and an

upstream (user to ISP) speed of around 128 Kbps, roughly equivalent to a dual channel ISDN connection. Unlike ISDN, it doesn't require a digital phone line — it can apparently be used on a normal line intended for voice traffic. Rockwell is claiming that its system won't need the splitter (the device that splits off the data and voice traffic) at the telephone switch, which significantly adds to the cost of using ADSL. ADSL has been available for some time, but it has been expensive to implement. According to press reports, this new system may be available by mid 1998. Just when you thought it was safe to buy a new modem rack, along comes another new (and, no doubt, expensive) technology that needs loads of new equipment.

RATING THE INTERNET (PART 1,345)

Some of you may have heard of the Internet Watch Foundation (IWF) (`www.iwf.org.uk`), an organization set up by the ex-owner of Pipex, Peter Dawe. The organization was designed to help stamp out illegal Net porn by operating a telephone hotline and reporting potentially illegal material to ISPs so they could remove it. Although the hotline has met with limited success (they claim to have acted on 700 items that were thought to be illegal in their first six months), the IWF is now working on a new system for creating ratings for web pages. This new system is being developed by a committee that includes representatives of the IWF, organizations like the Australian Broadcasting Committee and the European Commission and companies like Netscape and Microsoft.



The committee is trying to come up with a ratings system that will be objective — it won't be specific to any one country or culture. Within this structure, individual countries will be able to create their own rating systems, like the way film ratings differ between countries. The technology underlying this would be the PICS standard developed by the W3C.

David Kerr, the head of the IWF, said that the committee was looking at the "production of a practical means of making rating and filtering work, in a way which gives people worldwide an easy way to customize their experience of the Net, within a realistic time scale."

They've got a big job on their hands. So far, all attempts at a labeling and categorization system have failed because there has been insufficient support from the people who produce the web pages — systems like the RASCi ratings have failed because very few web sites actually use them. Although it's early days yet, I haven't seen anything from the IWF to convince me that they've got the answer that will convince people the world over to use its system.

A SHETLAND LEGAL SAGA

Speaking of lawyers, another interesting case concerning the Internet may soon be resolved. This one takes place on the windswept Shetland isles, some eighty miles north of Scotland. The legal action is being fought between two rival news organizations on the islands : *The Shetland Times* and *The Shetland News*.

The Times is the island's sole weekly newspaper. It's been published since 1897, and is owned and run by a chap called Robert Wishart, who used to employ another chap by the name of Robert Wills as his editor. The two fell out, with Wills leaving *The Times* to start his own news agency, called *The Shetland News*. Wills was quick to realize the potential of the Internet for publishing his stories, and set up a web site so that "Shelties" (as the web site refers to locals) all around the world could read news from the islands. He funds the site through advertising, mainly from local businesses and the tourist authorities. The legal action started in 1996 when *The Shetland Times* took action against *The Shetland News* to stop it from linking to stories on its web site. *The Times* claimed that Wills attempted to pass the stories off as his own by using the headlines from *The Shetland Times* stories and using a link within a frames-based web page to make it appear that the stories were part of his site. Wills denies that he is attempting to pass the stories off as his own — he claims that

he is merely creating links to another page in the same way as millions of other web pages do.

The Times successfully applied for an injunction to stop *The News* linking into its site, but Wills is appealing this decision. The legal process has dragged on, and is still going on. The latest installment takes place in a Scottish court in November, when Wills appeal will be heard. Wills has managed to get some strong backing: his legal fees are being paid by the National Union of Journalists. Several noted lawyers and academics have also come out in support of his arguments for being able to link into individual stories on a rival's web site. Meanwhile, *The Times* is continuing to claim that Wills was in breach of its copyright by using the headlines and linking into its stories in his framed site. The case has had a significant impact on both *The Times* and *The News* — the former has put off a decision on investing in a new printing plant until the case is resolved, fearing that the high legal costs that would likely follow a defeat in the courts could cause the company financial problems. "I have to consider the security of our staff and cannot risk further expenditure until the matter is settled one way or the other," Wishart commented. Wills said that "the wound is self-inflicted. If Mr. Wishart had accepted the normal Internet links we made to his electronic edition last October, he would now have more readers and advertisers — and more revenue to expand his business. Instead, he began a costly legal action and refused an offer to settle out of court. I cannot be held responsible for the inevitable results of his actions."

Although the appeal will be heard in November, this is not likely to be the final act in this ongoing saga. Depending on which way it goes, either side could then launch a further appeal or try to get a higher court to overturn the ruling. Heightened as it is by the personal animosity between Wishart and Wills, it seems that this particular legal saga may run and run. . .

You can find *The Shetland News* at `www.shetland-news.co.uk` and *The Shetland Times* at `www.shetland-times.co.uk`. ◆

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ISP TECH TALK

by Avi Freedman

CONFIGURING A CISCO ROUTER, PART 1: BACKGROUND

In the Internet world, the router's job is to take IP packets and move them from one interface to another. This is the core functionality of the router, though it may also do other things as well along the way (mostly relating to updating the "forwarding" or "routing" tables that dictate where the packets go).

Avi Freedman started Net Access, the Philadelphia area's original ISP, in October of 1992. Net Access is currently a regional ISP, with more than 80 downstream Internet providers and dedicated-line customers, and thousands of dial-up and web-hosting customers.

Avi also is cofounder of a new national ISP, Net Access USA, which focuses on dedicated connectivity for ISPs. For information, see www.netaccess.net.

Avi has been very active on the inet-access mailing list and is a vocal proponent of the continued viability of startup and existing ISPs. He is also on the ISP/C Board as director at large. ISPs can join inet-access by e-mail to inet-access request@earth.com with SUBSCRIBE in the subject. Avi can also be reached at freed man@netaxs.com or http://www.netaxs.com

THE ROUTE

While a route can have many more attributes, the most fundamental three attributes of all IP routes in a Cisco are:

(1) The starting IP address.
(2) The length of the route
(specified by the netmask).
(3) The destination IP or Interface of the route.

Basically, a route says "for packets destined to IP addresses in the range specified, send them to this interface or IP address."

BASIC IP ROUTING

For every packet that comes in, the router looks at the destination IP address and tries to find the most specific route that matches it. The router then sends the packet out the interface specified in that most specific route.

The most specific route is the one that covers the least number of IP addresses. For example, a host route covers only one IP address and is an example of the most specific IP route possible. A less specific IP route is a Class C-sized route of 256 IP addresses. The least specific (most general) route is the 0.0.0.0 default route, which covers any route not specifically covered by a more specific route.

This describes the average host on the average network on the Internet: any packet destined to itself will pick off with the host route; any packet destined to the local LAN will be sent out the LAN because of the Class C-sized route; and any packet destined to the Internet is not covered by either of those routes, so it is sent out to the router using the default route. The "most specific route wins" rule is one of the most fundamental rules of IP routing.

Routing based on destination IP address is not the only way to route (see policy routing in the Cisco documentation for methods of routing based on source-interface or source-IP rather than on destination IP), but it is fairly fundamental to Internet routing.

INTERFACES

Each router has multiple interfaces. The most common interfaces you'll deal with are Ethernet and serial interfaces, though before long you'll want to know how to configure the Console and Aux normal (asynchronous) serial interfaces, and you may want to send routes to the Null0 or Loopback virtual interfaces. High-end routers (which we'll cover eventually) have HSSI (for T-3s); ATM; Fast Ethernet; and other, more exotic, interfaces. Each interface usually has one or more IP addresses.

Serial interfaces on a Cisco router are actually synchronous interfaces generally used to run leased-line CSU/DSUs. Normally, you'll run them with external clocking (unless you're connecting two routers together). In this mode, the router has no preset idea of how fast each port will be — as long as it's not a low-speed serial port, every Cisco synchronous serial port should run speeds up to T-1 or E-1.

INTERFACE NAMES

On fixed-configuration Ciscos such as the 2500 series, each interface is numbered simply <Interfacetype> <Interfacenumber> — for example, Ethernet0, Ethernet1 (if you have a 2514, which has two Ethernet ports), Serial0, and Serial1. Every Cisco has a Console and most have Aux ports.

On larger Ciscos (except for the AGS, which is an older "large" Cisco), to specify an interface you need to know the slot number of the Interface card. For example, Ethernet0/0 and Ethernet0/1 are the first and second Ethernet interfaces on the Ethernet interface board in Slot 0. Serial4/0, Serial4/1, Serial4/2, Serial4/3, Serial4/4, Serial4/5, Serial4/6, and Serial4/7 are the 8 serial interfaces on the serial board in slot 4. Routers such as the 7206, 7000, 7010, 7505, 7507, and 7509 use this nomenclature.

When referring to interfaces, you can abbreviate as much as is possible without causing ambiguity — for example, e0, s0, and s1 instead of Ethernet0, Serial0, and Serial1.

POPULATION OF THE RIB

Ciscos can have many different routing tables in RAM — especially if you're using active internal and exter-

nal routing protocols — but the goal of the routing protocols is to actually populate the one actual IP routing table on which all packet-routing decisions are based. The technical term for this table in a Cisco is "the RIB" (routing information base), but it's commonly referred to as just "the IP routing table."

There are various ways to modify how competing routes get inserted into the RIB, but if unmodified, the order of preference is:

(1) Connected routes - most fundamental because they're associated with interfaces.
(2) Static routes - next most fundamental because they're used as "glue" and to "kludge around" routing problems.
(3) Internet routing protocols - OSPF, RIP, IS-IS (because you should trust yourself first...).
(4) External routing protocols - BGP4.

"Competing routes" are routes of equal specificity that are present in multiple routing tables (from multiple sources).

THE SECOND FUNDAMENTAL RULE OF ROUTING

It may seem simple and obvious, but not all routers implement a very critical function. Ciscos will delete routes from the RIB if the interface associated with the route is down. This allows the Cisco to have backup routes quite easily. When you get fairly into routing, you'll understand why this is a critical feature.

What this means is that if you unplug the Ethernet and serial interfaces from a simply configured 2501, a "sho ip route" will show no routes, since there are no interfaces "up" to attach routes.

CONNECTED ROUTES

The most fundamental routes on the router are those associated with the interfaces themselves. If e0 (aka Ethernet0) has an IP address of 10.20. 20.1 and the netmask is 255.255.255.0 (the size of a Class C — also called a /24), the route "10.20 .20.0/24" gets installed as a *connected* route, pointed out 10.20.20.1 (e0). Any packets destined for 10.20.20.2 through 10.20.20.254 will be sent out e0 (if there are no *more specific* routes inside of 10.20.20.0/24).

STATIC ROUTES

The next most fundamental type of route is that static route. These are routes that you insert with the "ip route" command. The "default route" is generally inserted as a static route, for example:

```
ip route 0.0.0.0 0.0.0.0 Serial1
```

Most smaller networks will be entirely "static routed" — the only routes on the routers will be connected or static routes.

Another quick note on static routes: adding a metric at the end of the ip route statement can change the preference of the route. The most common use of this is to insert a backup route. For example:

```
ip route 0.0.0.0 0.0.0.0 Serial1
ip route 0.0.0.0 0.0.0.0 Serial0 10
```

will cause the route pointing to Serial0 to stay unused, but to be inserted quickly if the preferred Serial1 route goes away (because it was deleted by hand or because the Serial1 interface went away).

DYNAMIC ROUTES: IGP and BGP

Dynamic routing protocols cause one router to advertise routes to another router. The routes being advertised always start out as static or connected routes somewhere, though. Eventually, we'll talk about OSPF, RIPv2, and IS-IS, which are interior gateway protocols (IGPs). You need to use an IGP if:

- You want to have a network that goes around in a redundant ring, and want it to "fail over" automagically

or

- You want to have dial-up users dial into multiple terminal servers. The terminal servers have to dynamically tell the routers who is connected at any time, or the routers won't be able to find them.

We've talked about BGP in earlier issues. BGP is a protocol used to dynamically advertise your routes to other networks, and to take dynamic route advertisements from them.

CONFIGURING A CISCO, PART 2: THE INITIAL SETUP DIALOG

This month, we'll end with a walk-through of the Cisco initial setup dialog — what you get if you turn on a new, unconfigured Cisco.

For our example, we'll use a typical, small ISP configuring its first router, which has:

- An Ethernet address of 207.106.1.1, mask 255.255.255.0, on the Ethernet0 port
- A serial address of 207.106.127.45, mask 255.255.255.252, on the Serial0 port

The only thing that can't be done in the initial configuration dialog is the default-route installation; we'll go over that below.

Also, we'll use:
(1) "internet-gw1" as the router's host name. This is not the Internet-visible hostname; it's just something that the router shows in command prompts.
(2) "letmein1" as the enable secret and enable password. It will complain but will let you set the same password for both parameters.
(3) "letmein2" as the virtual terminal password.

```
Would you like to enter the initial
  configuration dialog? [yes]
First, would you like to see the current
  interface summary? [yes]

Enter host name [Router]: <b>internet-gw1</b>
Enter enable secret: <b>letmein1</b>
Enter enable password: <b>letmein1</b>
Enter virtual terminal password:
  <b>letmein2</b>
Configure SNMP Network Management? [yes]:
  <b>no</b>
Configure IP? [yes]: <b>yes</b>
  Configure IGRP routing? [yes]: <b>no</b>
  Configure RIP routing? [no]: <b>no</b>
  <Possibly other IP routing protocol questions
    which you answer no to>
Configuring interface Ethernet0:
  Is this interface in use? [yes]: <b>yes</b>
  Configure IP for this interface? [yes]:
    <b>yes</b>
  IP address for this interface:
    <b>207.106.1.1</b>
  Number of bits in subnet feld [0]: <b>0</b>
Configuring interface Serial0:
  Is this interface in use? [yes]: <b>yes</b>
  Configure IP for this interface? [yes]:
    <b>yes</b>
  IP address for this interface:
    <b>207.106.127.45</b>
  Number of bits in subnet feld [0]: <b>6</b>
Configuring interface Serial1:
  Is this interface in use? [yes]: <b>no</b>
```

If you are asked any other yes/no questions, answer no. Then you are shown an initial configuration based on the dialog above.

Building configuration... [yes/no]:

Then the router will write and load that configuration. It will be done and ready to use in a few minutes.

When it's done, enter:

```
enable
<enter the enable password when asked>
conf term
ip route 0.0.0.0 0.0.0.0 Serial0
end
write
```

To finish the configuration.

Once that's done, plug in the Ethernet port and see if you can ping it. If you can, then Telnet into it and start looking at the interfaces (type "sho int Serial0").

If Serial0 is up and the line protocol on Serial0 is up, see if you can ping to the outside world (say, to 198.7.0.2, as an example).

If you can, you're done — and if not, call your ISP and ask them to walk you through things. And make sure they've turned up and configured their end of the circuit.◆

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----------End of Message----------

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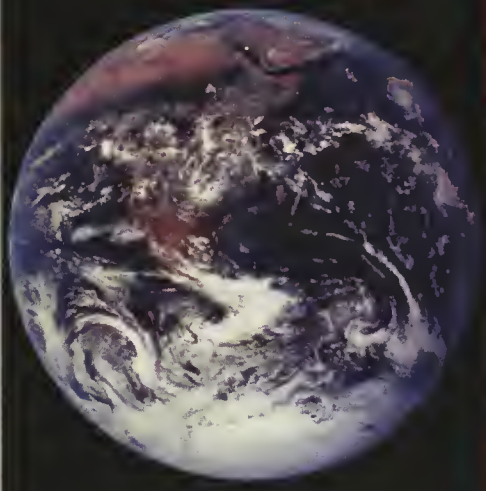

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Notes From The Underground

by Wallace Wang

HOSTILE JAVA APPLETS

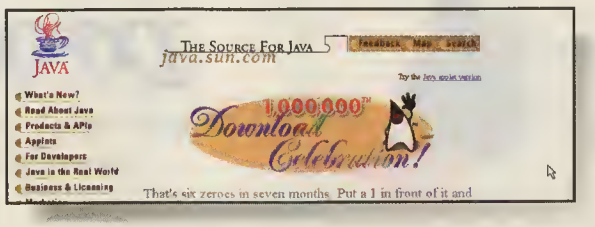
Sun Microsystems had a good idea. Develop a new universal programming language that can run on any computer. Of course, that great idea has been around ever since the proliferation of computers beginning with COBOL, FORTRAN, C, Ada, C++, and now Java, but despite the existence of programming "standards," try compiling a Borland C++ program under Symantec C++ and watch the error messages fly.

The idea of writing a single program once and being able to run it on an entirely different platform has always appealed to programmers. However, such a universal programming language as Java creates its own problems. Besides the difficult task of making a Java program run identically under diverse operating systems such as Windows NT, Unix, and the Macintosh, a more serious problem occurs when computers transfer Java programs, known as applets, over the Internet.

Computer viruses can already spread through the Internet, so to prevent people from writing viruses in Java, Sun Microsystems designed Java as a "safe" language that would (theoretically) keep someone from writing a Java program that could erase another computer's hard disk. To prevent hackers from writing Java viruses, logic bombs, or Trojan horses that could cause havoc on a computer, Sun Microsystems took a two-pronged approach.

The first defense involves limiting Java's capabilities. Java can do just enough to be useful, but not enough to be harmful, such as altering files. The second defense involves scanning Java applets downloaded over the Internet to make sure it doesn't do anything illegal such as erase a file. Only if the Java applet passes the scrutiny of your computer will it be able to run, at least according to the Java home page at `http://java.sun.com`.

For more information about Java that may not be tainted by Sun Microsystem's bias, visit the Java Security Resources web site at `http://pantheon.yale.edu/~dff/java.htm`.



Wallace Wang is the author of ***CompuServe For Dummies***, ***Visual Basic For Dummies***, ***More Visual Basic For Dummies***, ***Microsoft Office 97 For Dummies***, and ***More Microsoft Office 97 For Dummies***.

When not working with computers, he performs stand-up comedy and has appeared on A&E's *Evening at the Improv* TV comedy show. He can be reached via e-mail at `70334.3672@compuserve.com`, `bothekat@aol.com`, `bo_the_cat@msn.com`, or `bothecat@prodigy.net`

JAVA FLAWS

Even though Sun Microsystems specifically designed Java as a "safe" programming language, it still sports two glaring flaws. First of all, it's mathematically impossible to prove if a program works correctly, and since your computer needs to run a program to identify hostile Java applets, there's no guarantee that this security program will always work 100 percent correctly. This means that it's always possible that hostile Java applets can slip through your computer's defenses.

Upon Java's initial release, programmers gleefully found a number of security holes in Java caused by bugs in Java's implementation. At the 1996 IEEE Symposium, Drew Dean, Edward Felten, and Dan Wallach presented their paper, "Java Security: From HotJava to Netscape and Beyond." This paper outlined a number of Java security holes and concludes with the following sobering assessment:

We conclude that the Java system in its current form cannot easily be made secure. Significant redesign of the language, the bytecode format, and the runtime system appear to be necessary steps toward building a higher-assurance system.

Because of the current problems with Java, the safest course is to turn Java off (from the Netscape Security Preferences menu item) except when retrieving URLs from well-known and trusted hosts.

On 22 March 1996, Drew Dean and Ed Felton of the Princeton Department of Computer Science, announced that they had successfully exploited a bug in Java to create an applet that deletes a file on the user's local disk. In this bug, a binary library file is first downloaded to the user's local disk using the Netscape caching mechanism. The Java interpreter is then tricked into loading the file into memory and executing it. This bug is present in versions 2.0 and 2.01 of Netscape but has been fixed in versions 2.02 and 3.0x.

To learn more about this bug, visit Princeton University Secure Internet Programming at `www.cs.princeton.edu/sip`. In case you're really frightened about dealing with Java, download their Java Filter program, which lets you selectively decide which web sites to accept Java applets from and which ones to filter out.

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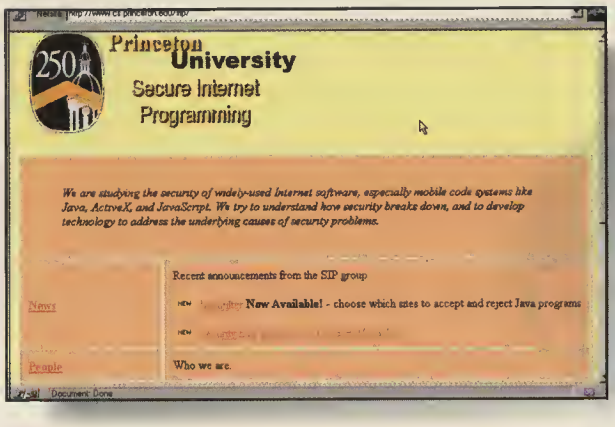
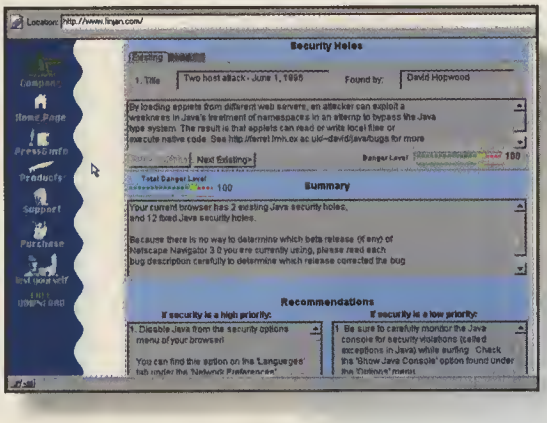


BYPASSING THE JAVA SECURITY MANAGER

Even more bad news for Java appeared on March 5, 1997 when an internal security audit at JavaSoft revealed a bug in the Java bytecode verifier. In theory, this bug could be exploited to bypass the Java Security Manager and execute forbidden operations. No actual exploitations of this bug are known but the fact that it exists raises question on what additional bugs may remain hidden and whether the first person to discover it will notify the world or use it for malicious purposes.

In case you want to test the security of your browser, visit the Finjan Software web site at `www.finjan.com` and let Finjan's Surfin Test Java applet probe for security holes in your browser. You might be surprised what you'll find.



ABILITY TO MAKE NETWORK CONNECTIONS WITH ARBITRARY HOSTS

Version 2.0 of Netscape Navigator contained another Java bug, this one involving the restriction on applets from contacting arbitrary hosts. Java applets are only supposed to be able to talk to the server that they originated from (to keep them from attacking another computer). However in early March 1996, Steve Gibbons and Drew Dean independently discovered holes in the implementation that allows applets to make connections to any host on the Internet.

This means that once an applet is downloaded to a user's computer, the applet can attempt to connect to any machine on the user's local area network, even if the LAN is protected by a firewall. Many LANs are set up so that local machines (those directly connected to the network) can access services that distant machines may not.

Theoretically, a Java applet could download itself to a computer connected to a network, search all the computers connected to that network, copy information off those computers, and send them back through the Internet without the user's knowledge. Such a Java applet would make a perfect "stealth" attack, allowing others to spy on a company's entire network of computers.

DENIAL-OF-SERVICE ATTACKS

Besides bugs in Java's security, a second problem occurs. Even if a Java applet follows the "safe" rules allowed by a computer, Java applets can still attack a computer through less obvious but equally devious means. One way to do this is to hog system resources such as memory and CPU time, thereby slowing the computer down and rendering it unusable.

Another problem occurs when a computer is running two or more applets. Under this circumstance, one applet could discover the second applet's existence and interfere with it, causing the second applet to run erratically and either slow or crash the host computer.

REAL-LIFE HOSTILE JAVA APPLETS

While many of the bugs and security flaws in Java have been fixed, there still remains a surprisingly large number of hostile Java applets available at the Hostile Java Applets web site at `www.math.gatech.edu/~mladue/HostileApplets.html`, or the Hostile Java Source code web site at `www.math.gatech.edu/~mladue/SourceCode.html`.

Some of these hostile Java applets can crash Netscape 3.0; read your host name, IP address, login, and password off your computer and display them on the screen to let you know just how (in)secure Java really is; and kill any other Java applets that may be running. Just be careful downloading and running these hostile Java applets or else you might mess up your own computer.

CAN JAVA EVER BE COMPLETELY SAFE?

No, next question. Given the always present possibility of bugs in Java's security, there will always (yes, always) be ways for hostile Java applets to slip through. And given that a hostile Java applet can still follow Java's "safe" guidelines, yet still find a way to hang or attack your computer, Java can never be declared completely safe to use. Then again, flying, driving, or walking down the street is never completely safe either, but that doesn't stop anyone from doing those things every day.

Despite Sun Microsystem's grandiose dream, Java will always fall victim to the same flaws that plague all programs and programming languages. If you want absolute safety in protecting your computer from Java, disable your browser's Java features or just turn off your computer completely. Java will never be completely safe no matter how many bug fixes it may go through.

So the next time your computer starts acting erratically, watch out. You may have a flaky computer, a buggy program, a computer virus, or a hostile Java applet trying to ruin your day. Given the additional problems that Java introduces, aren't you glad that computers are making your life easier?◆

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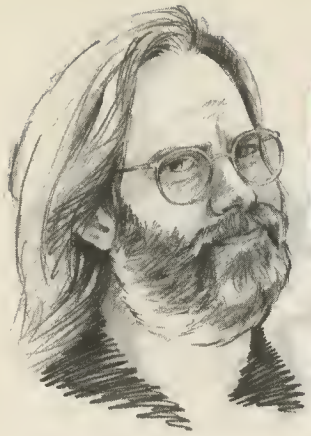


Java Jitters

by Doug Shaker

ANOTHER POT OF JAVA IS BEING BREWED AS WE SPEAK

As I write, Sun's latest attempt to have its cake and eat it too is being voted on by the ISO boards. If you need a recap, the International Standards Organization is the quasi-governmental body that manages global standardization efforts, including programming languages. Usually programming language standards are developed by non-profit organizations. However, Sun has proposed to the ISO that Sun be allowed to manage the Java effort. Sun is definitely not a non-profit organization, but, for my money, it has been doing a good job of managing Java. Still, if Sun were to be approved as the principal organization managing the Java standard, it would be something new.

Doug Shaker works at Expert Support Inc., a Silicon Valley company that writes and produces both technical documentation and training materials (www.xs.com).

Doug has one wife, two children, three pets and four computers. This numeric progression pleases him, though he cannot exactly say why. Doug, in a fit of nerdly machismo, has acquired his own personal Internet domain. He can be reached via e-mail at doug@theshakers.org.

ISO decides issues like this by submitting them to the member countries for a vote. Within each country there is a committee of some sort that decides how that country will vote. In large countries, the ISO committee is usually composed of representatives from several fairly large software or hardware corporations — Microsoft, IBM, Intel. In smaller countries, things may be less formal, with universities and research organizations having a say.

The last time the vote was taken, Sun got eight votes in favor of letting it manage Java standardization, fifteen votes against, and four abstentions or failures to vote. This time around, Sun seems to be trying to rally the smaller countries to its side, sometimes in conjunction with donations of equipment to universities that may have influence on the way the country votes. The larger countries — the United States, Japan, France and the United Kingdom — were the leaders in the negative vote last time, so it will be interesting to see if they stick with their no votes. If the U.S. and Japan were outvoted by New Zealand, Columbia, Egypt, Romania and Finland, what would happen then? ISO votes are supposed to be one vote per country, majority rules, but I expect that something nasty might happen the big, rich countries were outvoted by the smaller, less wealthy countries.

Personally, I don't much care who wins. Sun is doing a good job planning and managing the Java language effort so far. As far as I can tell, the only company that doesn't think so — big surprise — is Microsoft. However, that confidence in language management skills does not translate into a positive vote. Most companies are disturbed by the idea of a direct rival using a language definition against them and would rather have non-profits remain in control. But even if Sun loses the ISO vote, it will still have a choice of either going on as it is now — controlling and managing the language as a private company without the ISO — or participating with others in a more open standards committee. In the latter case, I think the company would still prevail with most of its proposals, either through inertia or sheer technical merit. Either way, I think that Java will remain a useful, even beautiful, computer language.

MICROSOFT vs. SUN

As you have probably heard, Sun has sued Microsoft over Java. Sun's basic contention is that Microsoft is leaving out parts of Java from its implementations. Because Sun wants Java to become a full operating environment — an environment which can host any arbitrary software application — Sun wants Java to include a set of APIs that will allow the programmer to do anything that one might expect an operating system to do. If Sun succeeds, then a Java program should be able to run equally well on any Java platform. Operating systems will, in some sense, become irrelevant.

Because Microsoft wants to retain control of the operating system market that it owns so thoroughly and profits from so handsomely, Microsoft does not want Java to become an operating platform. Microsoft wants Java to remain a programming language only, with major functionality of the operating system not promoted into the Java itself. Microsoft's latest version of their Internet browser — Internet Explorer 4.0 — leaves out some of the Java API.

This part that was omitted is what Sun is suing over. The actual portion that is left out is pretty trivial. I am told you can download a Windows version of it from Sun's Java web pages.

Sun, however, has sued over the omitted code. Its contention is that Microsoft, in a contract with Sun, agreed to distribute all of Java as Sun defined it. My guess is that Sun's reading of the contract is right, but who knows if a judge will ever agree. A lot hangs on the issue of what the judge decides is the proper definition of the notion "programming language." After all, I doubt the judge would rule in Sun's favor if the omitted component was an object called java.lang.truth that emitted the message "Microsoft stinks, Sun rules" whenever you sent a message to it. However, what the judge thinks may be irrelevant. It will probably be five or 10 years before a judge will

rule. By then, the issue will be decided by the market, not the judge.

The real point of the suit is to make sure that everyone knows that Microsoft's Visual J++ is not the "real" Java and to try to persuade programmers to work with a Sun-approved Java development environment rather than something that is incompatible. I don't know if that will work with the world in general, but it has worked with me. I still use Symantec's Visual Café and, when necessary, compile with the Sun compiler. It's easy, it's safe, and it preserves all my options.

JAVA FOUNDATION CLASSES

For the last few months, I have been ranting about Java's lack of a print model. Well, I have good news and bad news. The good news is that something is planned. I took a look around the Sun web site on Java Foundation Classes (JFC) (`http://java.sun.com/jfc`) and I found out that JFC will eventually include a component called Java 2D. The description of Java 2D (`http://java.sun.com/products/java-media/2D/forDevelopers/java2dfaq.html`) seems to have been written by developers and for developers, without much concern for anyone who is not pretty heavily committed to Java or, for that matter, the technical components of two-dimensional graphics. The page accents things like "Antialiased rendering [and] Bezier paths" while almost hiding the fact that the graphics can be sent to either screens or printers. If you need the jargon translation, antialiased rendering means that they use levels of gray to make the bitmapped graphics look less rough on the edges. Bezier curves are a way of specifying arbitrary curves that are used by lots of graphics models, including PostScript. The good news is that, since they have abstracted the notion of a graphics context, you should be able to print to any printer which your operating system supports.

The bad news is that Java 2D is not ready yet. I couldn't find a release date for it on Sun's web site. The closest I got was the statement that "Java 2D will be included in the next major version of the JDK, which has just been early access released to Java licensees. A beta version will be released to the public for free in the near future." In this case, Java licensees means the big boys who are building Java development environments — IBM, Symantec, Apple, Microsoft. My guess is that this means that the early access release is still pretty shaky, but it will be decent by the end of December and we plebes will see something usable by the middle of 1998. Tomorrow would be better, but I will be happy with the middle of 1998.

SHOW OF HANDS, PLEASE

Several months back, I used this column to try to build a whiz-bang stock market investment program. The idea was that someone could grab stock prices from the Internet, record them in a database, then run a neural net program over the data to find patterns, perhaps patterns that could be used to predict and make money from the market.

The effort bogged down when I got confused with my design. Also, I was trying to explain nearly every line of code and it seemed to me that my columns were getting pretty boring. Then, to top it all off, I realized there was a fatal flaw in the logic of my project. To make neural net prediction of stock prices work, I didn't just need stock quotes. I needed stock quote histories — daily quotes on the same stock for years and years of time. When I looked, all I could find on Internet were sources for the instantaneous price quotes. I couldn't find an Internet source for stock quote histories. So, faced with straightening out my bollixed-up code, making boring code readable and no success in sight, I blew the project off.

Lately, though, I received a few e-mails saying, in effect, what happened to your coding project? Here is where I am calling for a show of hands. If you care one way or another, please send me e-mail to `javaproject@theshakers.org` indicating whether or not you would like to see me continue the coding project. If you would like me to continue with the coding project, please indicate if you would prefer that I annotate the code line-by-line or if you would prefer something less detailed. Finally, if anyone knows of a no-charge source for stock quote histories, could you please send me the URL? Thanks.◆

STREAMING MEDIA by Doug Mohney

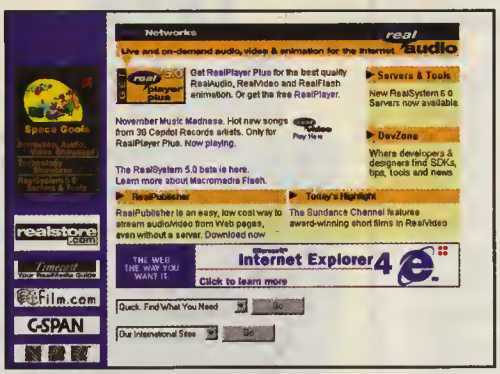
INDUSTRY UPDATING, MANAGEMENT ISSUES OF INTERNET BROADCAST OPERATIONS

Doug Mohney was employee #10 at DIGEX. He has learned, and forgotten, a lot about help desk support, competitive intelligence, sales and marketing, leased-line service ordering, telco service, and public relations. He makes no pretenses at understanding anything more about the technical side of IP other than being able to get a PPP account working.

His writings have been published in *LA View, Washington Technology* and the *Washington Post*. Doug receives e-mail at `moo@clark.net`.

First, an industry update.

On October 14, VDONet (`www.vdonet.com`), makers of the VDOLive streaming media video software, downsized its Boston staff by at least nine people in conjunction with a "refocus strategy" to support OEMs, development of their core software technologies, and support of major customers. It's unusual that VDONet has taken this step on the heels of a number of sweet spin announcements in September, in conjunction with the Voice on the Net Conference in Boston in September. VDO has been running demo trials of the newest version of its video server/viewer combination over Media One's cable network and via satellite. The souped-up version supports streaming media speeds up to 500 Kbps and a future version will support near-broadcast quality at around 1 Mbps.



VDO's re-entrenchment can only spell trouble for Microsoft in the video software market, currently under the antitrust gun of the Department of Justice for the bundling of Internet Explorer with Windows 95. If Microsoft is being taken to the woodshed for its Internet Explorer sins, most likely it is also under the microscope for its summertime spending splurge that included buying VXtreme and pumping money into Real Networks. Bill's boys have a good case for bundling the browser with Win 95, but telling Compaq and others to remove Netscape from the desktop or else lose their Win 95 licenses was a bad move.

Real Networks (`www.real.com`) filed to go public in late September, but as of this date it is unclear if Wall Street is willing to take the risk of a new public offering when the United States stock markets have been riding a roller coaster. Initial public offerings are risky business, relative to the flows and eddies of stock prices with established companies. While Real Networks has a good pedigree with Rob Glasier at the helm, skittish investment houses may prefer to keep their money in blue chip stocks and bonds rather than risk funds in the fledgling's company's IPO. Alternately, Real Networks management may choose to sit on the sidelines rather than risk a slow-start public offering.

Finally, UUNET (`www.uu.net`) has rolled out its UUCast service. As an interesting alternative for Internet broadcast, the company has implemented IP multicast across its national high-speed network. If you have a bunch of push stuff, streaming audio, or streaming video that needs to go out to a large audience on the UUNET network, you can use the UUCast service to put one copy of the content "out there" so any other UUNET customer can pick it up. Of course, UUNET charges **$15,000** per month for the service in addition to its leased-line fees. If you have streaming audio or video to deliver *and* are a UUNET customer, this service is probably worth looking into.

MANAGEMENT ISSUES FOR INTERNET BROADCAST

So you want to make money on this Internet audio/video broadcast thing, eh? You realize that you don't want to build your own large-scale broadcast network, since AudioNet,

itv.net, MCI/Real Networks, and UUNET have networks on which you can buy broadcast time. Your will focus on being either a content provider and/or a production integrator, since the broadcast networks aren't in the business of generating content or handholding someone who has audio and video to put on the Net.

If you are operating an ISP, you already have a couple of pieces down cold — TCP/IP connectivity and server operations. Let's also assume that you have the following resources:

1) One to four T-1s worth of bandwidth. More is better.
2) NT-based servers, so you can support either Microsoft NetShow or Real Network's Real Video server software.
3) A patient test customer that is willing to look the other way when you make mistakes in exchange for free or reduced-cost services.

Where do you go from here? What people, equipment, software, and services do you need to acquire so you can make your first customer a happy customer?

PEOPLE

If you are serious about being an Internet broadcaster, you may have to hire at least one and as many as three new people. Alternatively, you can assign new job responsibilities to your existing staff, but unless they have a lot of idle time to begin with, this won't work over the long term.

The first new hire should be an audio/video specialist. We're not talking about Camcorder Joe or the weekend DJ, but someone who has had experience in film and audio production, preferably someone who has shot and edited video tape and worked with mixing soundtracks. If you find someone with experience producing video with Adobe Premier, grab 'em!

The audio/video specialist will be on the front lines, working directly with the customer. This person will be setting up and adjusting the video camera, working with the microphones, and making sure that analog audio and video quality is good before it is converted into digital form. In a pinch, the audio/video specialist can also set up and monitor the encoding PC that takes analog audio and video and converts it into digital form before shipping it down an Internet connection to a distribution server or large Internet broadcast network.

More likely, and especially with live Internet broadcasting, the second hire is a connectivity technician, with responsibility for the encoding PC's workings and managing the Internet connectivity between the encoding PC and the distribution server or network. This person must be familiar with the latest PC hardware and have the skills necessary to set up a dial-up or a leased-line connection for remote events. This should be someone who can work under the gun, since live Internet broadcasts have a bad tendency to require last-minute connections that *must* work before and during the course of the event. If the connection goes down, the broadcast doesn't happen. People with a history of stress-related illnesses need not apply.

The final technical member of an Internet broadcast team is the server/distribution manager. For small Internet broadcasts of 20 to 40 people, the distribution server can be operated and managed in-house. Large-scale broadcasts will require coordinating the feed, which originates from the cybercast and is directed at a distribution service such as UUCast or the Real Network. This set of responsibilities can be rolled under an existing systems administrator.

HARDWARE

Analog audio and video equipment purchases will depend to some extent as to how much money you want to spend. Video cameras can range from the **$500** home camcorder to **$3,000** digital video cameras or **$25,000** professional video rigs used by (analog) TV news crews. If you can, go with the mid-range digital video camera, such as the three-CCD Panasonic or Sony models. They provide about 80 percent of the quality of a **$25,000** unit at about a tenth of the price. While the digital video cameras have fancy interfaces for a high-speed Firewire port, they still output composite and S-video. Almost all of the off-the-shelf video cards take composite input; almost none take Firewire as of this writing.

Tape is good. If you are producing a live cybercast and have the broadcast rights for future use, put it on tape! Tape is cheap. Tape can be used for re-runs and archival purposes. Tape can be used as source material for editing. Get the hint?

Next step is an Intel-based desktop, either a high-speed Pentium in the 233 to 266 MHz range or a 233 MHz or faster Pentium II. If you're going to be doing a lot of canned, on-demand video work, get a big hard disk and some removable media for backup. RAM is less of an issue. 32 Megabytes is the minimum and 48 or 64 Megabytes is sufficient. If you're willing to accept some compromises on encoding, a higher speed (200 MHz or better) Pentium laptops can also do the trick.

You'll also need a video interface card to take video input from the camcorder and video tape recorders. Models run the gauntlet from the **$199** Winnov's Videum (`www.winnov.com`) on up.

However, Winnov's video card is more than sufficient for your current and future needs since it'll capture up to 30 frames per second of video. It can also take both stock composite video and higher-quality S-Video inputs. For laptops, the Nogatech Conference Card PCMCIA card (www.nogatech.com) fits into a Type II slot to digitize video from a CamCorder.

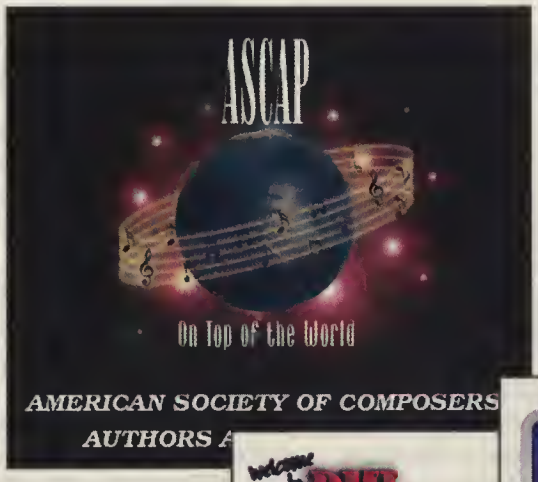
Several vendors are selling bundles that include a small CCD camera. Avoid them! The CCD cameras don't have the pointing and mounting flexibility that a hand-held CamCorder does nor do they offer the convenience of tape storage.

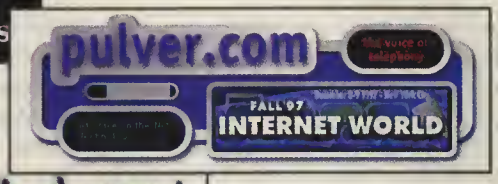
SOFTWARE

In addition to your choice of either Microsoft NetShow or Real Network's Real product, you should pick up a copy of Adobe Premier. Premier allows you to do non-linear (i.e. cut and paste) video editing. It's expensive, at close to **$500** per copy, but well worth the price if you want to edit video clips, add background soundtracks, add header and trailer credits, and the like.

LICENSING

If you use copyrighted music off of a CD or audio tape and incorporate it into your audio or visual works, you'll need to license its use. The two major licensing agencies for music are ASCAP (www.ascap.com) and BMI (www.bmi.com). Look at the fine print on the inserts of a CD some time, you'll probably find songs licensed to one, and sometimes both, of the agencies. Each time a song is used commercially in any way (including for broadcast), the creator should get some sort of royalty for his or her work. The hows and whys of music licensing are very complicated. I can only say:





- If you are using copyrighted musical works you need to pay the licensing fee.
- Usage of copyrighted works for on-demand streaming media or live streaming media should be well-documented so you can calculate the fees that you need.
- Take aspirin before you start reading about licensing fees.

Be aware that if you do not pay licensing fees and are using copyrighted musical works, you can/will have a visit from a lawyer. Video licensing is another topic for another day. On-demand vs. live on-demand audio/video has many advantages over live broadcast in the streaming media world. Typically, you can go back through an on-demand clip and clean it up with software tools, add spiffy special effects, credits, and other bells. The worst thing that can happen with an on-demand clip is having a server go down with some delay for viewers accessing it. Live video Internet broadcast is not cheap. It is technically challenging and organizationally demanding. If you do not know what you are doing with live video, you are going to fail and fail badly. It's not for the light hearted. On the other hand, when it works, you know you have done something that very few organizations can do well.

CONTENT — WHAT MAY WORK, WHAT WON'T

What you put on is ultimately more important than how it is done. Successful audio and video broadcasts over the Net can lead to more events and more dollars from event sponsors.

However, people are just starting to warm up to the idea of Internet broadcast as an alternative or supplement to traditional television and radio, so you'll have to be patient. After all, it's taken about four years from "What's a URL?" to "I need a web site now!"

Some potential customers for Internet audio/video broadcast include local and state governments, public companies, entertainment producers, and advertising agencies. Anyone who is producing shows for cable TV is a potential customer. Cable shows can be limited to a geographic region, depending on regulatory issues; Internet video can go anywhere.

Of course, if you are really crazy, you can get into something with an adult entertainment theme. Adult entertainment video services can either work on a subscription or pay-per-view basis and are raking in a lot of money if you have the right talent.

CRASS SELF-PROMOTIONAL PLUGS (OF A SORT)

Jeff Pulver (pulver.com), of Internet telephony fame, is putting together a video on the Net conference in mid-February in Los Angeles. There will be a technology track and an applications track, with a possible pre-conference seminar on the hows of streaming audio and video. (Disclaimer #1: I am the co-chair of this conference. I am not being paid any money for my contributions, but Jeff is feeding my ego on a regular basis, so I would like to see a good turnout at the event.)

Wiley Computer Publishing has a book coming out sometime in the first quarter of '98 called *The Internet World Guide to Webcasting*. Peggy Miles of InterVox (www.intervox.com) and moderator of the webcasting mailing list is the lead author, but seven leading experts contributed to the 400 page tome. (Disclaimer #2:Although I am one of the contributors. No, I am not getting royalties from the book.) ◆

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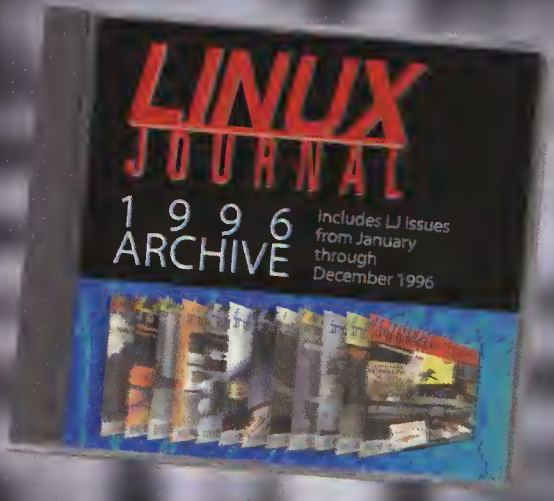

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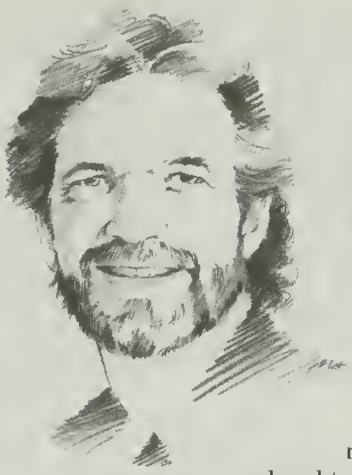

MANNING THE WIRES

by Ric Manning

JAPANESE DON'T SEEM TO SHARE OUR NET FRENZY

Ric Manning is a columnist and web master for ***The Courier-Journal*** in Louisville, Kentucky. His weekly column covers computers, consumer electronics and the Internet and is distributed to more than 100 newspapers by the Gannett News Service. It's also available on the World Wide Web at **http://courier-journal.com/gizweb.**

Ric was the founding editor of ***Plumb*** and ***Bulletin Board Systems,*** two newsletters that covered the BBS arena in the early 1980s. His freelance work has appeared in several magazines including ***PC/Computing, Mobile Office, PC Week*** and ***Home Office Computing.*** Ric lives in Southern Indiana with his wife, two children and two Weimaraner dogs.

It's almost 9 o'clock on a Sunday night, a time when the downtown area of most large American cities would be surrendered to the street people and the pigeons. But in the Umeda district of Osaka, the streets are swarming with people.

The author on the streets of Akihabara

Teenagers in their tricked-out Toyotas and Nissans have taken over a side street near the Japan Railways main station. They're blasting a mixture of American and Japanese rock music, trying to pulse the window walls of the nearby bank building.

Salarymen and their wives or girlfriends mix with the teenagers under the bright neon lights in the narrow side streets. While the financial firms and trading companies that line the main streets have closed for the night, the side streets are alive with crowds from the small nightclubs, restaurants and tiny drinking clubs that crowd together along what Americans would probably call an alley.

Business is also lively at Web House, a small U-shaped office that wraps around a two-person elevator on the third floor of a small office building.

Web House (`www.netpower.co.jp`) calls itself an Internet cafe, but that might be stretching the point. Like almost everything else in urban Japan, it's cramped and crowded. Yes, it has the Internet: nine Windows PCs linked to a single ISDN line. And yes, you can get a cup of coffee while you surf the Web. But you'll have to pour it yourself from the coffee maker wedged between two computer tables. If you're hungry, you'd better stop at one of the noodle shops outside.

The proprietor, Yoshinori Muroya, keeps the place open until 9 o'clock every night, seven nights a week. His clients range from local students and salarymen to visiting foreigners like Chris Partridge, a British journalist who is desperate to check his e-mail after five days offline.

"A lot of young people come in to look at the movie star pages or to write to their friends in the U.S. or the U.K.," Muroya said.

The cafe charges **600 yen** (about **$5**) for 30 minutes online. Regulars can buy a monthly membership for about **$65**, a price Muroya says is too low and will increase soon. He says many clients work in offices where e-mail is available, but not the World Wide

above: Yoshinori Muroya, proprietor of Web House

right: an ISDN phone booth

Web. They come to Web House to do research, send personal e-mail or just to surf the Web.

To a foreigner, Japan's relationship to the Internet, like almost everything else in the country, looks like a curious dichotomy. Japan may still be the world's consumer electronics powerhouse, but there's not much evidence of the Internet frenzy that is sweeping through American businesses and culture.

Telephone directories in Tokyo and Osaka list only a handful of Internet service providers, with prices that vary widely. A Tokyo ISP called Crisscross (`www.crisscross.com`) offers immediate access for about **16¢** a minute or unlimited access for about **$26** a month. AT&T advertises its WorldNet service for about **$16.50** a month plus a **$25** set-up fee.

Japanese families have been much slower than Westerners to bring computers and online services into their homes. Despite a recent surge, only about 20 percent of Japanese homes have PCs — about half the penetration level in the U.S.

Computers are plentiful in the Akihabara and Nihonbashi, the electronics shopping districts in Tokyo and Osaka. But so are the multi-purpose word processors that have all but disappeared from American electronics stores. Sharp, NEC and other manufacturers were still introducing new models at the Japan Electronics Show in October.

Muroya said Japanese students have begun to get some basic computer training in high schools. But he said few schools have a link to the Internet.

Yet while Americans complain that they can't get an ISDN line for their home, the digital lines are plentiful in Japan. Last year there were more than one million ISDN users in Japan, compared to about half that many in the United States. NTT, Japan's dominant telephone company, has even installed ISDN lines and data terminals in many public telephone booths in Japan's business centers.

ISDN, however, may be a mixed blessing. Muroya said he pays NTT **38,000 Yen — about $315** — each month for his dedicated ISDN line. He said NTT uses Frame Relay to split service among 25 customers and during peak demand times, access can be spotty. Muroya said he could get a more dependable line from private suppliers, but would cost far more than what NTT charges.

And although Japan's electronics giants seem to have shifted their focus to communication products, few of them target the Internet. Most of the big names at the electronics show — Sony, Toshiba, Panasonic and Sharp — showed off dashboard mapping systems, electronic cameras and pocket organizers, but few products that offered smooth integration with the Net.

Sharp, for example, gave journalists a look at a prototype system designed to download music files directly to a Mini Disc stereo system. With more bands and record labels distributing music on the Web, music fans might welcome the storage capacity of the Mini Disc. But Sharp's system was developed strictly for use with a laptop computer and PC card. A desktop system would be far more practical, at least in the United States. So would an internal Mini Disc drive for PCs or, even better, a system that would work with WebTV or NCTV.

Sharp's Color Zaurus

Sharp is also selling a sleek new organizer on the Japanese market. The Color Zaurus features a bright color screen that can accept handwritten notes. The device can accept a small camera in its PC card slot and it has a built-in modem and communication software — but no browser.

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The Japanese may be waiting for the Internet to arrive through their television sets. Toshiba has joined the NC camp and Sharp is selling a 32-inch television that can access InterTV, a "family-oriented" online service delivered over the Internet.

And WebTV is cranking up in Japan. Backed by Sony, the Microsoft-owned service will begin selling units in Japan this month. The WebTV terminals will cost about **$370** with 15 hours of access priced at about **$16.50** a month.

With all that competition on the horizon, Muroya isn't sure how long Web House will be able to make a business out of public Internet access. Web House gets 40 or 50 customers on a good day, but Muroya said that's not enough to pay the bills. "It's not a good business," he said. "It's not profitable but we can do some other things, like design web sites."

Muroya is working with several businesses, including hotels, trading companies and clothing companies, to create company web sites. Some clients are pleased with their web experience and some aren't.

"The hotels have had a good response. Some are taking a lot of reservations," Muroya said. "But not the others. I think the Internet will be good for the travel industry and financial businesses, like securities and banking."

Muroya said he was inspired to open Web House after visiting an Internet cafe in Kyoto. "I was impressed," he said and he soon left a job with his father's textile business to start the cafe. Even if Web House doesn't produce the income that he would like, Muroya says he's glad he made the move.

"I wanted to get into this industry and this was a good way to do it," he said.◆

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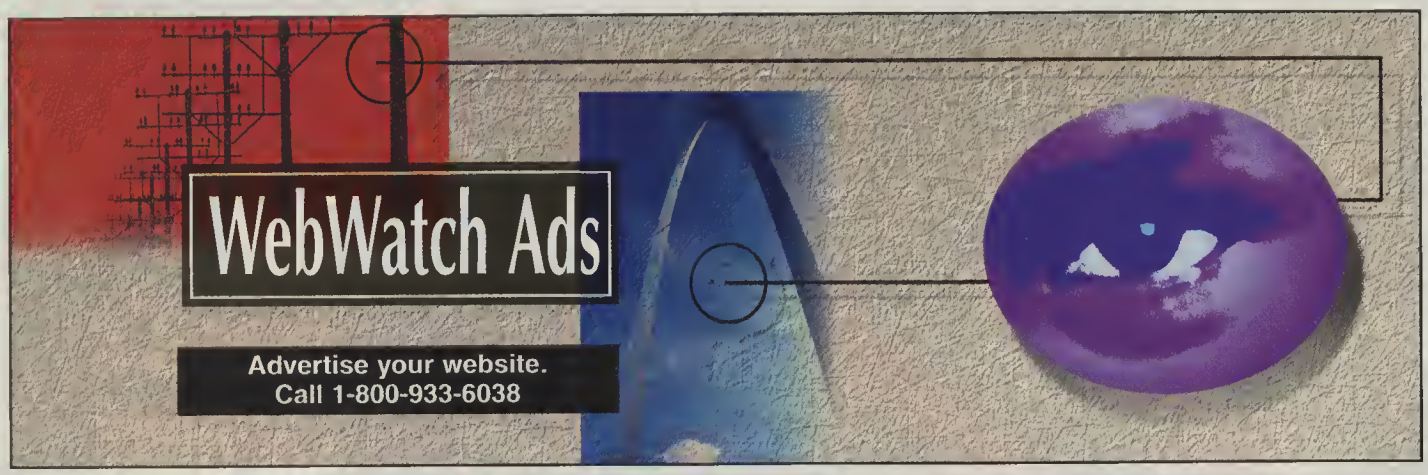

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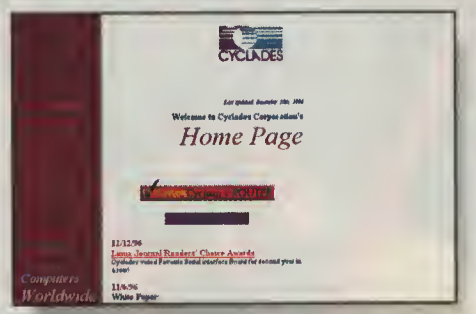

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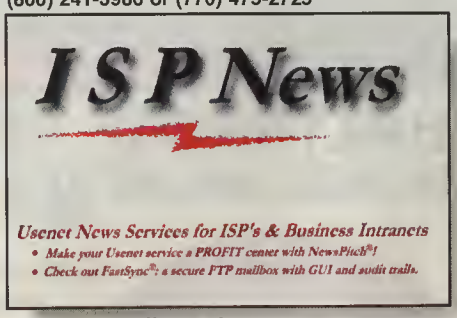

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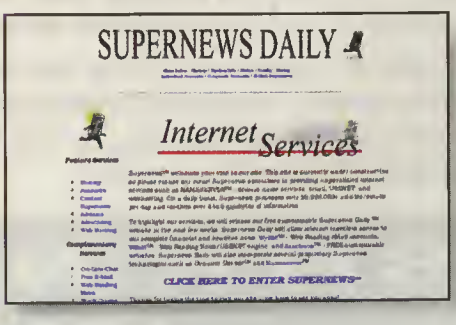

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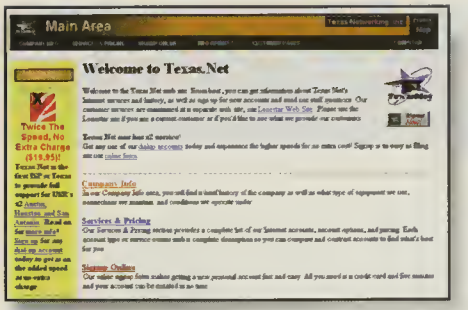

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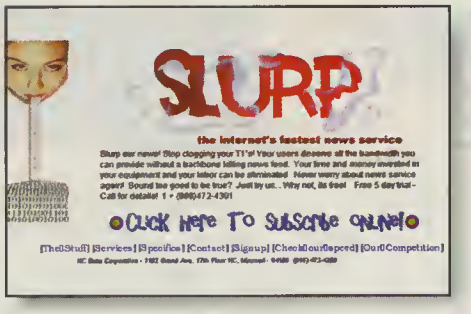

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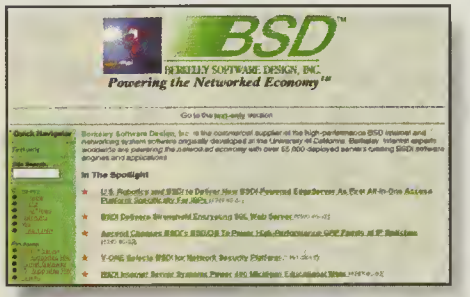

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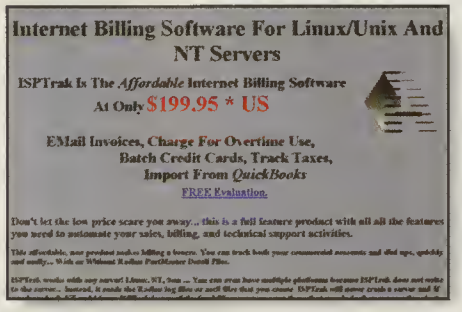

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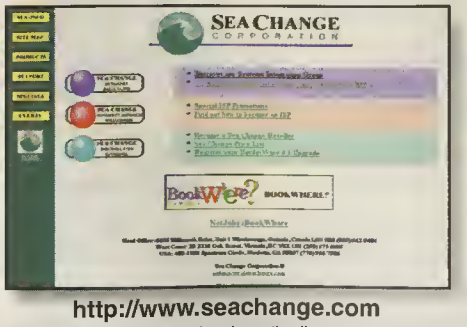

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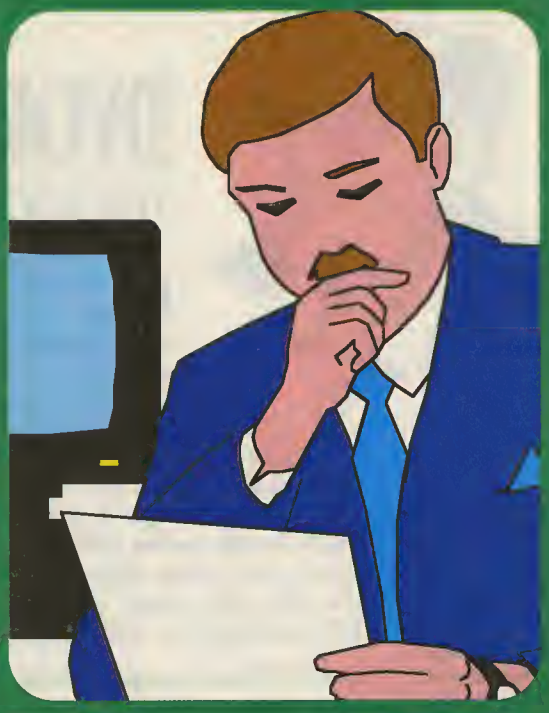

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DVORAK ONLINE by John C. Dvorak

THE BROADCASTER'S DILEMMA

The American broadcasting community has a year or so to get its act together regarding HDTV — a technology for which it was given free air slots by the government for the sole purpose of putting this technology out there. I was watching a *Nightline* recently and saw the same old HDTV hilarity emerge that first emerged a decade ago. It was then that HDTV was going to be an analog technology and the Japanese bought into it hook, line and sinker and lost their butts. Now it's digital. The fact is we don't need HDTV, we need more digital data services.

This HDTV farce crapped out the first time because it was a service people didn't need. It will crap out again — or at least take forever to implement. I was amused by the *Nightline* report that showed various Congressmen going on an on about how "we'll fall behind the rest of the world" if we don't do something now! I keep hearing this argument and think to myself, "Fall behind? In what? TV?" Does anyone care if the TV is visually better in Dusseldorf? So what? Hey man, it's just TV! Half the time the cable is screwed up or people are watching on rabbit ears. Let's be realistic.

There has been no real improvement in TV since the invention of color except for the sudden emergence of large screen TVs and projectors. But broadcasters are some of the dumbest people in the world and skitter around like ninnies when any new idea lands on to the table. Let's look at some of the typical fiascoes we've seen over the past years regarding broadcasting.

AM Stereo — This one is a beaut. Battling technologies and promises of fantastic quality AM radio proved to be one of the biggest flops in broadcasting. Absolutely nobody cared about getting stereo from the crackling AM bands. I have a car radio that gets an AM stereo signal and it's laughable. Most people do not even know that AM stereo exists. This entire episode in the history of broadcasting epitomizes the current state of affairs in the executive suites. Can you spell "clueless?"

500 Channels — This entire tale is within recent memory. I was never sure what the heck triggered the sudden emergence of the 500 channel model, but for over a year the idea captivated broadcasters and they used their news organizations to pump the notion into the public consciousness. To no avail. We never saw anything come of the idea except a lot of talk about video servers. This episode brought the computer people into the picture for the first time indicating that they are becoming as brain-dead as broadcasters.

Despite obvious inefficiencies and bad economies the computer people were going to develop outrageous video servers that would buffer movies in such a way that banks of 60 channels could be used to show the same movie beginning at 60 different time intervals. Like this is something we need. This technology was to be developed for the oaf who was too lazy to get off his Barcalounger and haul his butt to the video store to rent a tape. One day, mysteriously, all talk of the 500 channels disappeared.

UHF — While on the subject of more channels, let's go back in time to the original "we need more channels" fiasco: the establishment of 80 or so UHF channels, few of which were ever used. They finally got used by cable companies needing to find a way to use the TV tuner to get the various channels. Some of the high end of the original UHF spectrum was given to the cell phone network and you can listen to calls on old TV's. Before any more work is done on new ideas, someone should study the history of UHF. I'm always amazed by all those blank channels. In the San Francisco Bay area, we don't even use all the VHF channels. Channel 6 and 12, for example, have no signal. UHF channels are mostly religious or infomercials with UPN and the WB network struggling in that zone. You'll also find a couple of low-power college stations there. I always pointed to the deserted UHF band during the 500 channel debate.

DVD — While not strictly a broadcasting fiasco it comes from the same video-related consumer electronic executives who constantly try to shove technologies down the throat of the American public. So far DVD is one of the biggest jokes we've seen. Luckily the computer users will save it from a miserable fate.

Then there are trends that are hard to ignore.

Large screen TVs — HDTV advocates always like to equate the possible transition of HDTV to that of color in the 1950s. The problem here is that in the '50s, tube manufacturing technologies were relatively stagnant. In today's market the TV tubes have been increasing in size to the point where 32-inches is obtainable inexpensively. And people are buying home theater projectors. They are not going to backtrack to smaller screens just because the images are sharper. People want big, not sharp. This wasn't the case in the 1950s with color. This bigness phenomenon really screws up the HDTV changeover since the small HDTV tubes cost over **$2,500** and they are too small for today's market. People would prefer to spend less money for a big tube.

In addition to his weekly syndicated radio call-in show, *Software/Hardtalk*, syndicated newspaper columns, magazine writing for ***MacUser***, ***PC Computing***, ***DEC Professional***, ***Information Technology***, and his featured "*Inside Track*" column in ***PC Magazine***, Dvorak is the author of several best-selling books, including ***Dvorak's Inside Track to DOS & PC Performance***, ***Dvorak's Guide to PC Telecommunications***, and ***Dvorak's Inside Track to the Mac***. John can be reached at `dvorak@dvorak.org`

The content factor — There is a lot of evidence that people are looking at web pages rather than watching TV because the content (300 million pages) can be better. And it can. This isn't going to change with HDTV, in fact the opposite is more likely. HDTV requires rather expensive new cameras and tape subsystems as well as new mixers and transmitters. All of this costs money and the money will come out of the easiest thing to cut back on: writing. When costs go up, the writers are the ones who get screwed (along with the public which is forced to watch drivel). So what will HDTV be broadcasting in its early years? Sports, travelogues, nature shows, news and not much else. Once people get over the cool look of an HDTV image (kind of like the image we already have on our 1280x1024 monitor), they will turn away from TV in droves. It will still be a medium with even less to offer than before.

The Image factor — And what about the HDTV image? I've seen it over the years and find it tedious. Just because you can see every hair on a rat doesn't mean you *want* to see every hair on a rat. Furthermore, the contrast on HDTV stinks. As hard as they try, most video technologies have been unable to eliminate the "flat" look of a video image. This is because the contrast depth is negligible when compared to film or real life. This is exaggerated on HDTV. Some people in the industry believe that the public actually dislikes this look once they see it.

Time switching — People like having and using VCRs. I can't imagine what an HDTV VCR would cost. It has to be off the scale. I suppose something can be designed which "guts" the HDTV signal and records a normal-looking NTSC signal. The supposed backward-compatibility of HDTV might simply allow us to use our old decks. But, still, what if we want to record and playback the full HDTV spectrum? No can do.

Over time we can transition the country to HDTV by simply not making anything else. This seems to be the trend in consumer electronics although they might take forever to actually doing it. The 16x9 ration tube is a perfect example of something that is going nowhere fast and will only succeed when the old screen ratio is simply discontinued.

I guess what bothers me about this whole thing is the amount of money that will be wasted over the next few years. Money that would be better spent putting people online. ◆

Dvorak's Recipe Nook

Scratch Cooking

Amongst most cooks the issue of cooking everything from scratch becomes an issue of pride. Do you buy a cake mix, for example? Or do you do the whole cake from scratch? And how far do you take the definition of scratch? Do you mill your own flour? Do you grow your own wheat? Where do you draw the line with the scratch cooking concept?

I think the goal is to always push in the direction of growing your own wheat. In other words, do as much as you can to move yourself away from the food processing industry to doing everything yourself. In the process you discover that, in fact, the food processing industry does a great job with some of its products. Tobasco Sauce, for example, is one of the world's greatest products and one that can't easily be made from scratch. At some point, you have to show some judgment and let someone else — a specialist — do some of the work. It's hard to beat a bottle of Chateau Margaux, no matter how good a home wine maker you are. But considering that the Chateau makes a quarter million bottles of more of this wine, they have to be categorized as a food processing company. I can live with it!

The Chinese are notorious for using processed food products. Thousands of vendors make specialized pickles and sauces and all sorts of things for this far ranging cuisine. You could spend a lifetime experimenting with the range of processed foods available to the Chinese cook.

Once in a while, the scratch cook has to bite the bullet and actually use catsup, let's face it. I have a simple barbecue-like sauce I use for one purpose — broiled shortribs. I have experimented with other coatings for this dish to no avail. Nothing works. You can tell by the ingredients that it was thrown together on a whim one time about 20 years ago and still works for me.

Off The Shelf Sauce

ingredients:
1/2 cup catsup
1/8 cup A-1 Sauce
a few good shakes of Worcestershire Sauce
1/8 cup finely chopped green onion (green part only)
pepper to taste

Coat thick, meaty, so-called English-style shortribs with this sauce and broil. Turn and re-coat as necessary.
This is no recipe to brag about it, but does the job and, except for the chopped scallions, it's all processed products.

I don't want to unnecessarily encourage this kind of kitchen alchemy, but I do think people should experiment more carefully with unique processed products. I travel a lot and always go into grocery stores to see if there are any unique products that I can incorporate into my cooking. For about two years I sought out a decent barbecue seasoning that I could use as a dry marinade for ribs and chicken. One of the local rib joints used a dry marinade on their fabulous ribs and the owner would tell me nothing about it. Looking at it I could see it had some pepper and paprika and couldn't determine much more. So I began to look for a commercial product that would work well as a dry marinade. I probably went through 40 different blends and became enamored with one from a Florida spice blender and only available in certain stores in the South. It's Astors Barbecue Seasoning. I should mention that the entire Astor line of spices and blends is excellent and highly recommended. I liberally coat any meat to be barbecued with its barbecue seasoning and it always draws raves. I have tried to match the recipe and have been unable. So I just buy a few containers of this stuff when I'm in Georgia and live with it. Not everything can be done from scratch. ◆

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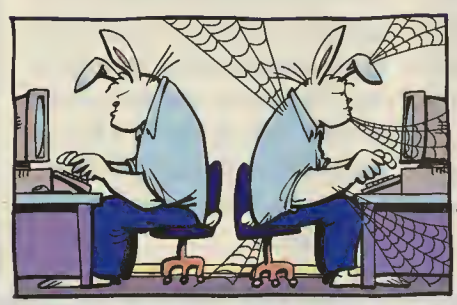

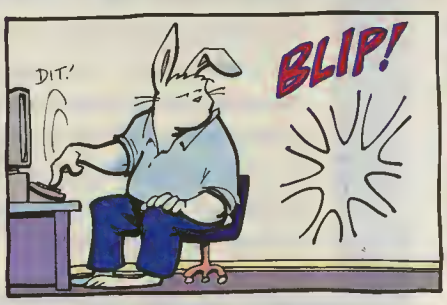

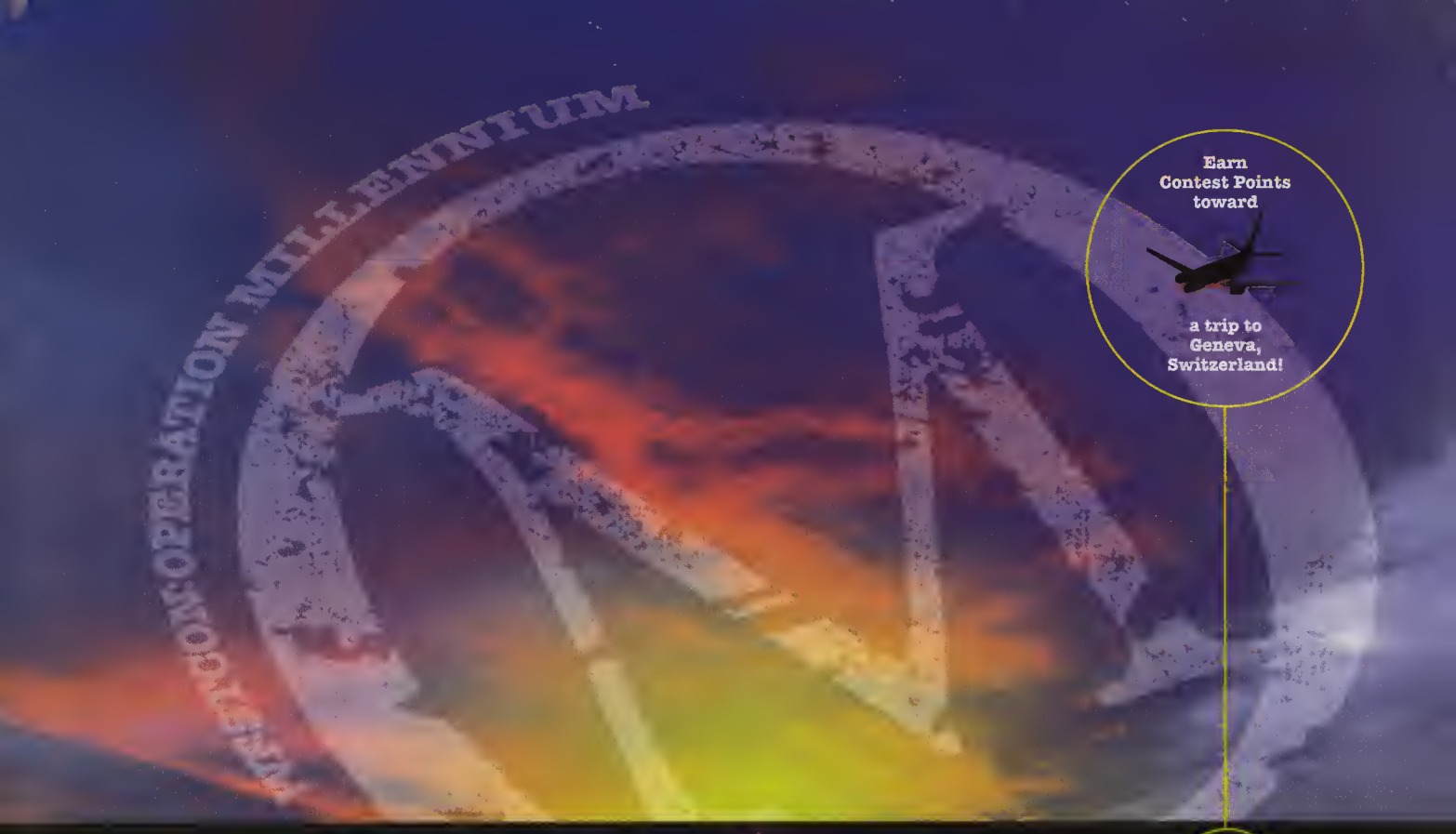

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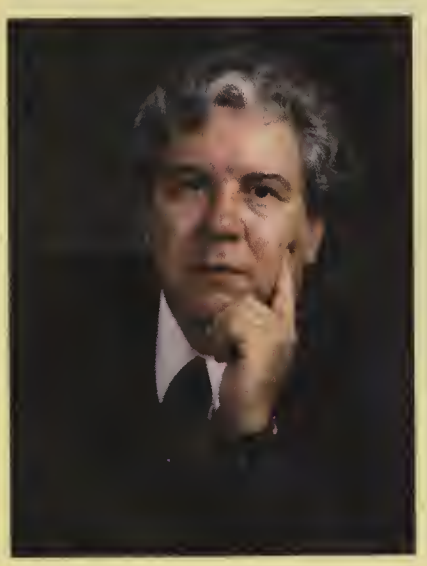

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